BUTANE-PROPANE News

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Technology

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ill our independent dealers be
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ave pioneered in developing
d, exclusive features for bet-
ng.

make the Grand Gas Range
a still more valuable asset for
dealers, the new post-war mod-
supported by consumer adver-
cial merchandising events and
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Grand

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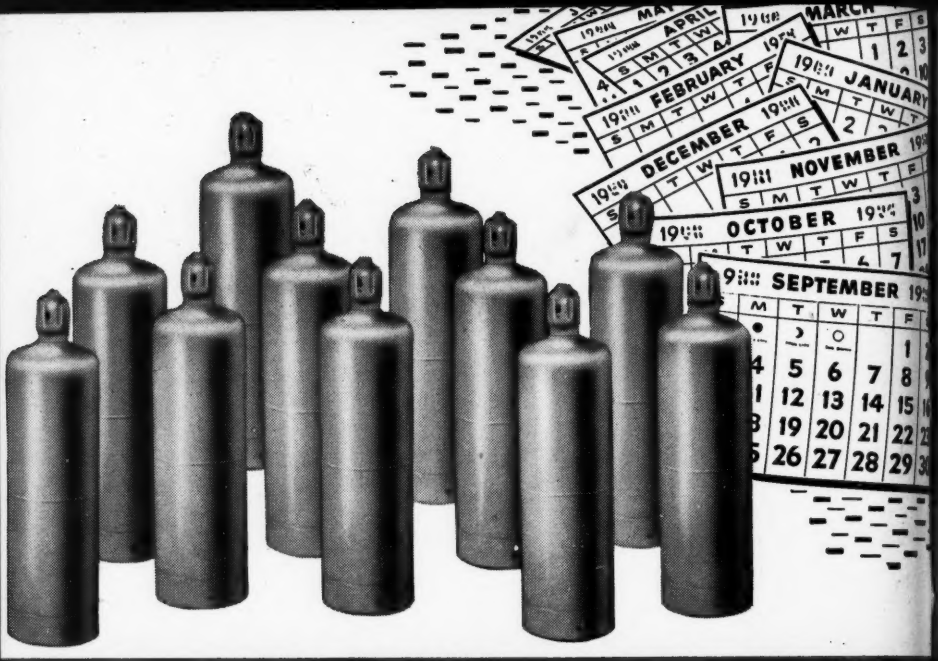
HOME APPLIANCE COMPANY
CLEVELAND, OHIO

NOVEMBER, 1944



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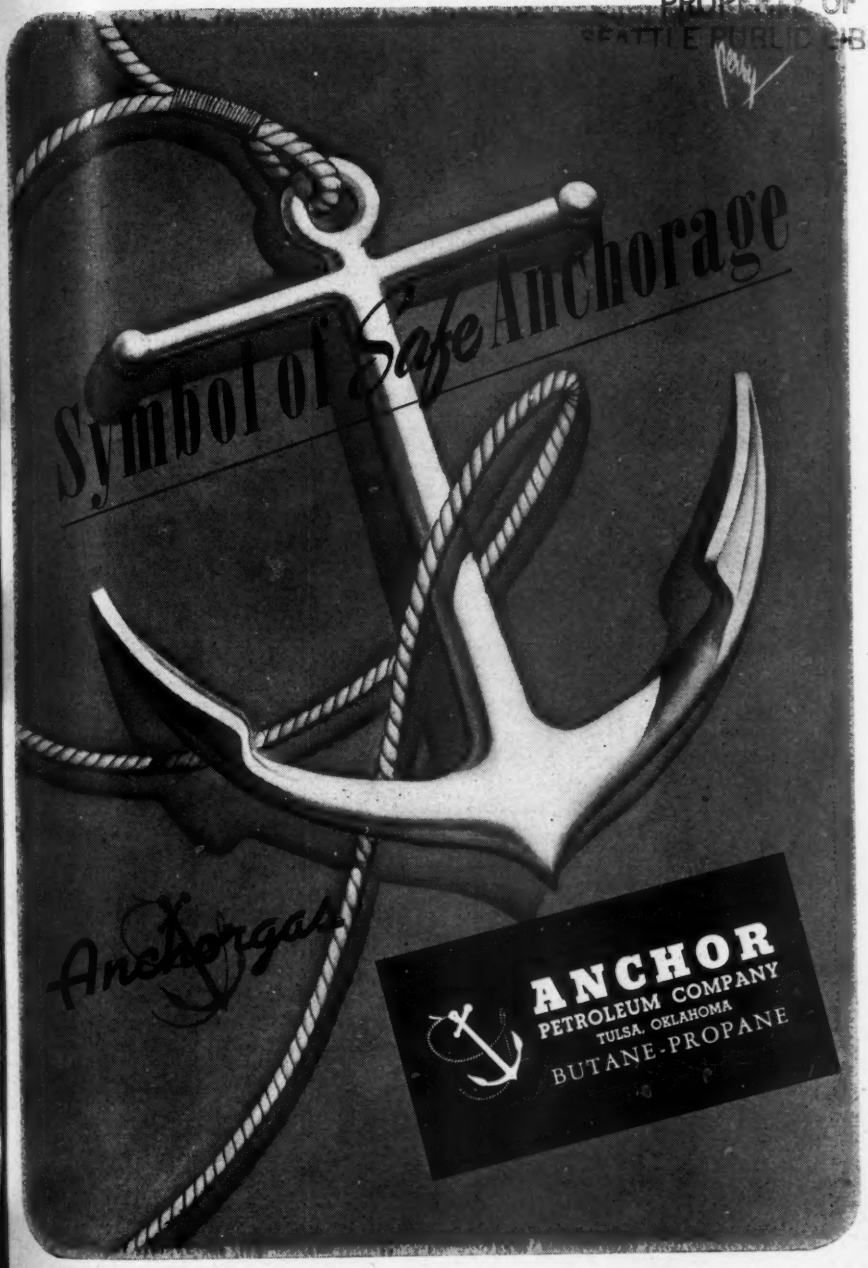

BUTANE-PROPANE News

Reg. U. S. Pat. Off.

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LETTERS

• **Have you service or operating problems? Submit them to us and our technical department will endeavor to help you.—Ed.**

•

Gentlemen:

I am anxious to establish myself in the liquefied petroleum gas business in some community in the state of Kentucky.

Could you give me a list of towns in Kentucky which do not have piped gas systems?

M. L. C.

Kentucky

We have had several inquiries seeking this same information by firms and individuals who are looking for locations to establish themselves in the LP-Gas business, either with the intention of installing town plants or serving cylinder and underground systems. We do have available lists in various states of towns of 2500 and more population which do not have piped gas systems. Those for Kentucky, with their population figures, are as follows:

Bardstown, 3152; Benham, 3200; Carrollton, 2910; Central City, 3152; Cumberland, 4149; Dawson Springs, 2560; Earlington, 2858; Elizabethtown, 3667; Foxtown, 2757; Fulton, 3308; Harlan, 5122; Harrodsburg, 4673; Heidelberg, 2645; Jenkins, 9428; Lebanon, 3786; Lynch, 10,000; Mayfield, 8619; Middlesborough, 11,777; Morganfield, 3079; Murray, 3773; Nicholsville, 3192; Pineville, 3882; Providence, 4397.—Ed.

•

Gentlemen:

I would like to know if there is any difference in the automatic shut-off valve of a natural gas water heater and one using bottled gas. If so, what is it?

I am in the bottled gas business and some of my competitors are hooking up natural gas water heaters on bottled gas installations. These water heaters have automatic shut-off valves but they do not have the label showing approval for liquefied petroleum gas.

Please let me know what is correct so as to meet with the underwriters insurance company requirements.

E. G.

Illinois

The only mechanical difference is that the orifices are not the same in size, but nevertheless it is considered bad practice to adapt a natural gas water heater for use with butane or propane without installing a thermostat with a 100% shut-off valve. As you realize, any leakage of LP-Gas becomes a fire hazard and no water heaters are approved by the AGA Testing Laboratories which do not have 100% shut-off valves.

We are all interested in promoting every safety precaution possible and I would be interested to know whether or not installation practices in Illinois are governed by any state regulatory body. If so, the practices of your competitors might well be called to the attention of any such authorities.—Ed.

•

Gentlemen:

I am interested in the home appliance business in Central Washington and would like to buy some tanks, regulators, hot water tanks, and other equipment that can be sold through an appliance store.

I would appreciate very much if you would advise me, as to what kind of equipment, when and how much, will be available, and at what prices.

J. N.

California

I do not believe that I can serve you any better than by sending you a copy of the last issue of BUTANE-PROPANE News, in which appear advertisements of many firms handling appliances and equipment for our

industry. Letters addressed to those of interest to you will be promptly answered and you can make your own decisions as to what companies you would like to do business with.

At the present time, the War Production Board is limiting new installations to those of a strictly essential nature. No doubt this condition will maintain until the war with Germany ends, but it is not too early for you to make your plans and decide upon the kind of equipment you would like to use when the restrictions are eased.—Ed.

•

Gentlemen:

Quite sometime ago you sent us a list of equipment and appliance manufacturers and suppliers, which we have evidently mislaid. Can you furnish another at this time? If not, will you please place our name upon your list to be supplied at the first time this is available?

A. H.

North Dakota

There are many appliance manufacturers who are selling ranges, water heaters and space heaters to the natural gas industry who do not make appliances for the LP-Gas industry, so it would be hard to pick out the ones that sell liquefied petroleum gas appliances from any general list.

I am sending you a copy of the advertisers' index of BUTANE-PROPANE News which lists the names of many appliance and equipment manufacturers, all of whom sell to the LP-Gas trade.—Ed.

•

Gentlemen:

We would like information on propane carburetion including the names of any manufacturers who market such carburetors and any available literature on operation of automotive vehicles on propane.

Specifically we desire to study this subject from a view of practical application in the automotive industry.

J. L.

Illinois

Very frequently in BUTANE-PROPANE News, there appear articles upon the subject of converting gasoline engines to use with butane or propane or mixtures of the two.

Probably, the best reference I can give you is a book published by us entitled "Handbook BUTANE-PROPANE Gases" which devotes an entire chapter to this subject.

The leading manufacturers of carburetion equipment are advertisers in BUTANE-PROPANE News. I am sure all of these firms would be glad to send you their catalogs.

In the past, butane has been used almost exclusively as fuel for these converted gasoline engines, due to the fact that there was an abundance of butane available in the West and the Southwest, where most of the conversions have been made. With the butane shortages which have developed since the start of the present war, there is now a trend toward propane.

There are no practical differences between the two fuels, except that propane develops a higher pressure under normal atmospheric conditions and requires a heavier fuel tank and a different relief valve setting. The fuel is a very practical one for internal combustion engines because it leaves no residue since there is complete combustion in the cylinders. The result is there is very slight wear on bearings and other parts and oil consumption is cut approximately in half.—Ed.

•

Gentlemen:

Could you tell us where we can purchase a set of spud reamers for propane gas?

P. D.

Massachusetts

Spud reamers are usually available at hardware stores. However, the use of spud reamers on orifices for propane gas is not particularly good practice. It is very difficult to ream the small orifice by hand and get consistent results.

We suggest getting a supply of spuds of various drill sizes and using the complete spud when required.—Ed.

•

Gentlemen:

Can you advise us where we can get blueprints needed for the installation of a cylinder testing apparatus?

M. T.

Missouri

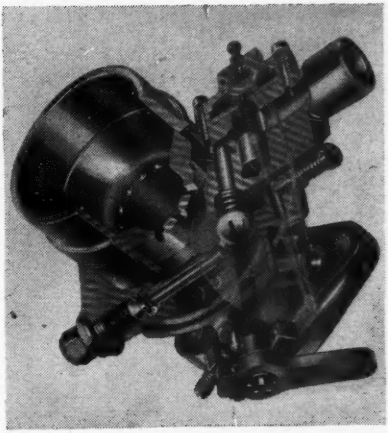
There are several firms in the country who make such equipment, one of which is Ed. C. Smith, 2623 North Second, Harrisburg, Pa.

The Day and Night Water Heater Co., of Monrovia, Calif., makes vats which could be used with a hand pump which you would have to supply yourself.—Ed.

ALGAS

THINK AMERICAN

BUTANE CARBURETION AT ITS BEST



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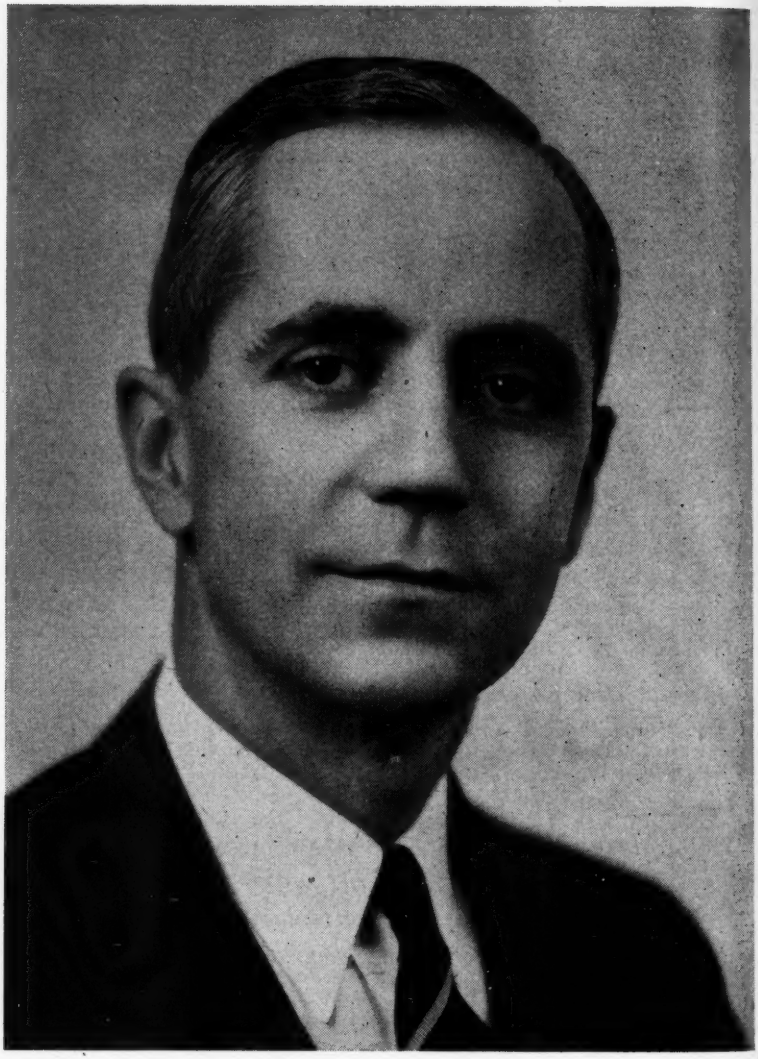


ROSS W. THOMAS
Guest Editor for November

LP-Gas "Comes of Age"

By ROSS W. THOMAS

Manager, Chemical Products Department,
Phillips Petroleum Co., Bartlesville, Oklahoma

Our liquefied petroleum gas industry is older than 21 in calendar years, and younger than 21 in years of rapid growth, but we may be truly said now to be "of age" and ready for the rapid progress—and the responsibilities—of vigorous manhood. Our industry is presently on the threshold of its real period of expansion. We now have approximately 1.8 million domestic users out of a potential of some 13,000,000 homes beyond the gas mains.

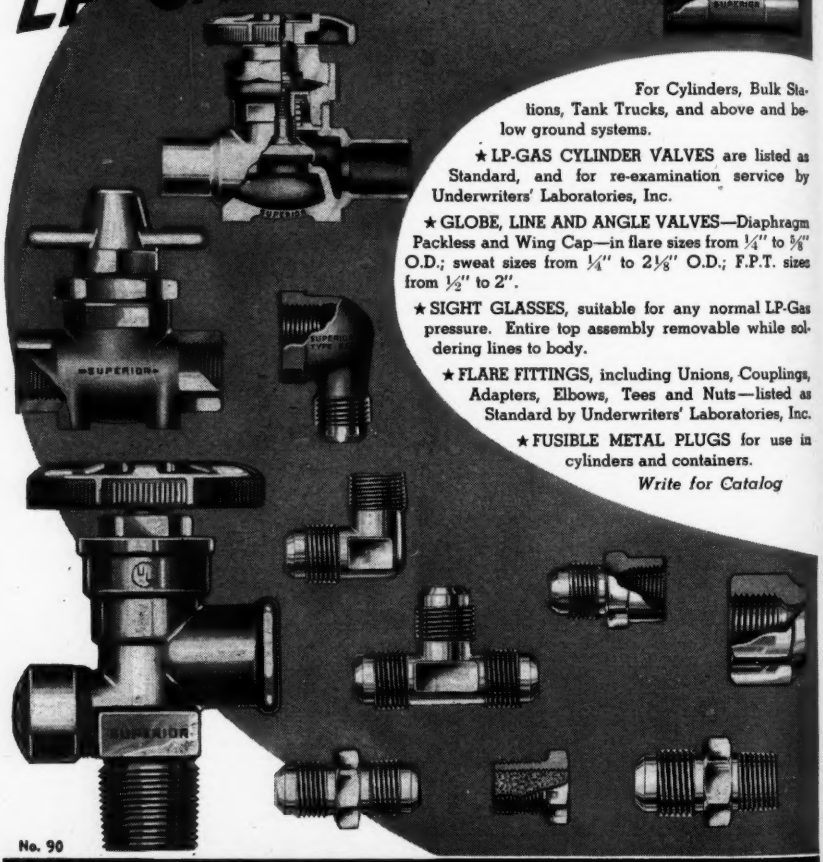
Experience shows that upon obtaining a 10-12% saturation of a household product or service, the industry is "over the hump." Customer acceptance increases by leaps and bounds from that point on, providing the industry sells conservatively and effectively, and assiduously cultivates and maintains its customer goodwill.

To create this desirable condition, it is essential that the customer receive more value and convenience for his dollar than offered by competition. Ably managed liquefied petroleum gas organizations foresee no difficult problems in profitably competing with kerosene, coal, gasoline, wood, oil or electricity.

Active dealers require adequate profit margins—and vigorous outlets are the life blood of every business. Moreover, good salesmen and other fellow-workers will find attractive careers in our industry if we offer them a busy, growing, profitable future.

We must commence to rebuild and retrain our organizations now, rather than to wait until aggressive merchandisers of competitive products and services have preempted the best manpower and have consumed much of the stored-up demand for household and commercial conveniences. Let us be prepared to push on "over the hump" and continue to prosper with liquefied petroleum gas!

SUPERIOR
LP-GAS VALVES AND FITTINGS



For Cylinders, Bulk Stations, Tank Trucks, and above and below ground systems.

★ **LP-GAS CYLINDER VALVES** are listed as Standard, and for re-examination service by Underwriters' Laboratories, Inc.

★ **GLOBE, LINE AND ANGLE VALVES**—Diaphragm Packless and Wing Cap—in flare sizes from ¼" to ⅝" O.D.; sweat sizes from ¼" to 2⅛" O.D.; F.P.T. sizes from ½" to 2".

★ **SIGHT GLASSES**, suitable for any normal LP-Gas pressure. Entire top assembly removable while soldering lines to body.

★ **FLARE FITTINGS**, including Unions, Couplings, Adapters, Elbows, Tees and Nuts—listed as Standard by Underwriters' Laboratories, Inc.

★ **FUSIBLE METAL PLUGS** for use in cylinders and containers.

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No. 90

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MAINLY BEYOND THE MAINS

By ELLIOTT TAYLOR, Washington Editor

Get Set

At the annual meeting of the American Gas Association, Ernest R. Acker, president of that organization, announced to the utility gas companies a plan for research, advertising and promotional development in the gas industry that surpasses anything that has ever been thought about much less undertaken — in gas history.

ELLIOTT TAYLOR

If the plan gets the approval of the AGA member companies and affiliates, it will mean that the present $400,000 annual advertising appropriation will be stepped up to $800,000. Research in connection with domestic, commercial and industrial appliances will be allotted another $200,000 a year, and $200,000 more will be spent annually on general promotion programs aside from advertising.

The scheme is set up as a three-year program at the outset, with every probability that the ante of $1,400,000 per year will be upped at the end of that period if the initial blasts of the campaign are successful.

We mention this in some detail because, while it is strictly a city gas undertaking, the overflow benefits that should accrue to LP-Gas can be tremendous if the industry jointly and severally is on its toes to take advantage of the opportunity. The AGA is not as yet fully alert to the necessity and the advantages of cooperating more completely and fully with the LP-Gas industry; but, in a promotion of this magnitude every part and segment of the gas industry comes in for its share of the advancement. And that will include butane and propane just as surely as it will include both manufactured and natural gas. As far as the what-to-do suggestions and instructions are concerned, we can't top the report of the AGA postwar planning committee; its recommendations, with very little paraphrasing, can be adapted straight from manufactured and natural to LP-Gas.

The highlights are things that any dealer can do to a greater or lesser degree, depending on the size of his operations and the amount of imagination and optimism he has for the future. They are worth memorizing and starting in on right now; so look at them as they would read if they had been prepared for butane and propane dealers instead of for town gas companies:

Every company should plan and be ready to carry its share of the postwar employment load.

Every company should lay publicity and advertising plans with competent direction to encourage public opinion to accept LP-Gas as the modern fuel in homes beyond the mains.

Advertising should concentrate on the use of gas in the kitchen.

The industry should fully understand and appreciate the superior service of modern gas cooking appliances.

The industry should encourage the trend toward kitchen ventilation in modern homes.

The use of LP-Gas in the domestic water heating and refrigeration markets should be aggressively pursued with renewed zeal.

Where commercial and industrial loads are feasible, such business should be aggressively developed as soon as existing limitations on expansion are lifted.

Companies should study their rate structures to be sure that prices charged for butane or propane are right to secure gas loads that can be economically served, at a profit to the operator.

Sales, appliance development, and promotional activities of the industry should be coordinated by gas utilities, LP-Gas Operators and the manufacturers of gas appliances.

Unnecessary multiplicity of models (by the manufacturers), should be avoided so as to lower manufacturing costs of appliances.

Individual gas companies should not request manufacturers for special models.

Every LP-Gas dealer should assume leadership in merchandising in his area.

An adequate sales force should be selected and trained in advance to fully realize the potential possibilities of the postwar market.

Wherever possible, backlog orders might be given to manufacturers to help them to prepare for the reconversion period.

All gas companies, including manufactured gas, natural gas and LP-Gas, should cooperate fully and whenever possible.

Every company in the LP-Gas industry should realize that its individual support is essential to the 100% success of the whole program.

It is true that many of the suggestions outlined above are obvious almost to the extent of being commonplace. Yet every successful merchandiser knows that it is the attention to every one of a host of basic details that means the difference between the success and failure of many of his ambitious schemes.

If the postwar planning suggestions of some of the best sales-planning talent in the natural and manufactured gas industries are worth anything at all, they are worth a trial in LP-Gas as well.

If they seem too primitive for some of our own butane and propane merchandisers, we will be glad to print with appropriate applause, anything that looks to them like an improvement.

But with this warning: In our book, just sitting still and thinking about postwar, no longer rates as planning. It is time for our industry to distribute its manpower and material in preparation for the assault on the peace-time doldrums that the lack of planning will inevitably create.

Flexibility

The war has taught a lot of people some pretty valuable lessons—but on the other hand, a lot of people have overlooked valuable lessons that they could have learned.

We haven't concluded our research on the subject yet—but it seems to us, from where we sit, that a lot of the butane operators are already preparing to forget the lessons that they were exposed to during the last two winters, and this winter too, in all probability.

How many times has some butane dealer—with his storage about empty and his customers getting ready to flood him with rush orders for delivery—wished that he could take advantage of the fact that there always has been plenty of propane available? Plenty of propane, but not for him or his customers, because his bulk station equipment and the consumers' installations weren't rated to handle the higher pressures of propane.

It would not be beyond the range of sound LP-Gas engineering to plan and build every new bulk station and every new storage tank on the customer's premises so that the equipment all the way up to the appliances, could be used with either butane or propane.

Of course, this would add somewhat to the cost of new installations—but it is not cost that the public is concerned with —but value—and the value of any domestic fuel installation lies 99% in its ability to deliver uninterrupted service in fair weather and foul—year in and year out.

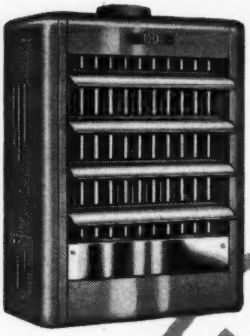
Nobody knows now exactly what the postwar position of butane will be. There are those who say it will again be plentiful for its old domestic, commercial and industrial uses. Others foresee it being diverted more and more from its use as a common fuel and into the synthetics as a chemical raw material, or, as an ingredient of tomorrow's gasoline. Between these two prophecies, you can pay your money and take your choice. But every distributor and every dealer who builds for a future in which he is prepared either way, is just fitting two strings to his bow.

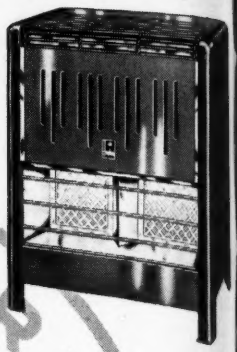
So—no matter how the game jumps—he will still have his shot at it!

HUMPHREY

Quality

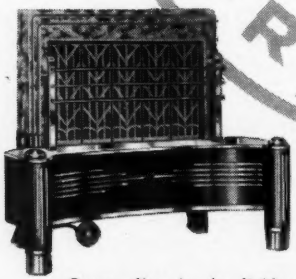
QUARTET!





A HUMPHREY PRODUCT

REMEMBER THIS MARK OF QUALITY



Outstanding in the field of gas burning appliances are Humphrey Radiantfires, Humphrey Radiantfire Circulators, Humphrey Unit Heaters and Humphrey Heat Towers.

Advanced Styling, careful workmanship, and sound, progressive engineering keep Humphrey appliances "out in front" and jealously guard the Humphrey Mark of Quality.

GENERAL GAS LIGHT COMPANY KALAMAZOO, MICHIGAN

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Practical Economies of
High Pressure LP-Gas Lines

By EARLE A. CLIFFORD
Chief Engineer, Utilities Distributors, Inc.
Portland, Maine

WHEN the local shipyard asked if we could supply the fuel to heat the large building which housed their tin shop we said, "Yes, we can do anything with propane." They also wanted the "know how" and the necessary equipment, so we set to work making the blue prints and ordering the materials that would be needed. When cold weather came, the welders had completed the furnace, the burners and controls were installed and the heating plant was ready to operate.

E. A. CLIFFORD

We learned much in putting in this job about saving critical materials, to say nothing of the money saved, both made possible by running high pressure gas from one of our main storage tanks which was located about 200 feet from the boiler room of the tin shop.

If we had located the low pressure regulator at the outlet of the storage tank, it would have required about 200 feet of 2½-inch pipe to carry the load. Instead we installed a "Big Joe" large capacity, high pressure regulator at the tank and piped the gas at 35 pounds pressure through a 1-inch extra heavy steel pipe. Three-quarter-inch pipe would have been large enough but as there was a possibility of an increased load in the future, the next larger pipe size was used.

By using high pressure gas we saved the difference between 200 feet of 2½-inch pipe and the same length of 1-inch pipe. The saving on this one job didn't contribute much perhaps to the winning of the war but this same principle applied to subsequent jobs of a similar nature did result in a considerable saving.

Plan Adapted to War Plant

A few months ago our engineers laid out the plans for a gas installation in one of Maine's war plants where the multiple cylinder installation had to be located about 100 feet from the point of use. Automatic regulating equipment was used, and as the first stage regulators and the low pressure regulator are normally installed as a single unit, the job would have required 100 feet of 1½-inch pipe.

TABLE 1. VALUES OF "h"*

Pressure Drop	Initial Pressure (Pounds per sq. in. Gage Pressure)									
	1	2	3	4	5	6	7	8	9	10
.1	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9
.2	6.3	6.7	7.1	7.5	7.9	8.3	8.7	9.1	9.5	9.9
.3	9.3	9.9	10.5	11.1	11.7	12.3	12.9	13.5	14.1	14.7
.4	12.4	13.2	14.0	14.8	15.6	16.4	17.2	18.0	18.8	19.6
.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5
.6	18.5	19.7	20.9	22.1	23.3	24.5	25.7	26.9	28.1	29.3
.7	21.5	22.9	24.3	25.7	27.1	28.5	29.9	31.3	32.7	34.1
.8	24.5	26.1	27.7	29.3	30.9	32.5	34.1	35.7	37.3	38.9
.9	27.5	29.3	31.1	32.9	34.7	36.5	38.3	40.1	41.9	43.7
1.0	...	32.4	34.4	36.4	38.4	40.4	42.4	44.4	46.4	48.4
1.25	...	40.2	42.7	45.2	47.7	50.2	52.7	55.2	57.7	60.2
1.50	...	47.9	50.9	53.9	56.9	59.9	62.9	65.9	68.9	71.9
1.75	...	55.4	58.9	62.4	65.9	69.4	72.9	76.4	79.9	83.4
2.00	...	...	66.8	70.8	74.8	78.8	82.8	86.8	90.8	94.8
2.25	...	...	74.6	79.1	83.6	88.1	92.6	97.1	101.6	106.1
2.50	...	...	82.3	87.3	92.3	97.3	102.3	107.3	112.3	117.3
2.75	...	...	89.8	95.3	100.8	106.3	111.8	117.3	122.8	128.3
3.00	...	...	...	103.2	109.2	115.2	121.2	127.2	133.2	139.2
3.25	...	...	...	111.0	117.5	124.0	130.5	137.0	143.5	150.0
3.50	...	...	...	118.7	125.7	132.7	139.7	146.7	153.7	160.7
3.75	...	...	...	126.2	133.7	141.2	148.7	156.2	163.7	171.2
4.00	...	...	...	....	141.6	149.6	157.6	165.6	173.6	182
4.25	...	...	...	....	149.4	157.9	166.4	174.9	183.4	192
4.50	...	...	...	....	157.1	166.1	175.1	184.1	193.1	202
4.75	...	...	...	....	164.6	174.1	183.6	193.1	202.6	212
5.00	...	...	...	....	....	182.0	192.0	202.0	212.0	222
5.50	...	...	...	....	....	197.5	208.5	219.5	230.5	242
6.00	...	...	...	....	....	....	224.4	236.4	248.4	260
6.50	...	...	...	....	....	....	239.9	252.9	265.9	279

* From UDI Gas Slide Rule Instruction Manual. Copyright 1941. Used by permission.

TABLE 2. VALUES OF "h"*

Pressure Drop	Initial Pressure (Pounds per sq. in. Gage Pressure)									
	15	20	25	30	35	40	45	50	55	60
.1	5.9	6.9	7.9	8.9	9.9	10.9	11.9	12.9	13.9	14.9
.5	29.5	34.5	39.5	44.5	49.5	54.5	59.5	64.5	69.5	74.5
1	58.4	68.4	78.4	88.4	98.4	108.4	118.4	128.4	138.4	148.4
2	114.8	134.8	154.8	174.8	194.8	214.8	234.8	254.8	274.8	294.8
3	169.2	199.2	229.2	259.2	289.2	319.2	349.2	379.2	409.2	439.2
4	221.6	261.6	301.6	341.6	381.6	421.6	461.6	501.6	541.6	581.6
5	272.0	322.0	372.0	422.0	472.0	522.0	572.0	622.0	672.0	722.0
6	320.4	380.4	440.4	500.4	560.4	620.4	680.4	740.4	800.4	860.4
7	366.8	436.8	506.8	576.9	646.8	716.8	786.8	856.8	926.8	996.8
8	411.2	491.2	571.2	651.2	731.2	811.2	891.2	971.2	1051	1131
9	453.6	543.6	633.6	723.6	813.6	903.6	993.6	1084	1174	1264
10	494.0	594.0	694.0	794.0	894.0	994.0	1094	1194	1294	1394
15	....	815.9	965.9	1116	1266	1416	1566	1716	1866	2016
20	....	....	1188	1388	1588	1788	1988	2188	2388	2588
25	....	....	....	1610	1860	2110	2360	2610	2860	3110
30	....	....	....	....	2082	2382	2682	2982	3282	3582

* From UDI Gas Slide Rule Instruction Manual. Copyright 1941. Used by permission.

In order to save critical materials we located the first stage regulators in the conventional manner, but installed the low pressure regulator within a few feet of the appliances. The vents of the pressure relief valve and the spring side of the regulator diaphragm were piped to a safe location out of doors so there would be no hazard in locating the low pressure regulator inside the building. With this arrangement ½-inch steel pipe carrying gas at 10 and 15 pounds pressure was adequate to meet the requirements. The saving represented in the use of the smaller pipe size included a considerable saving in labor as it is very much easier to run ½-inch pipe than the 1½-inch size.

Dealers Face Same Problem

These are but two examples of installations where the piping of high pressure gas resulted in worthwhile savings of both labor and critical materials. Every LP-Gas dealer will find situations where similar savings can be made if he has the "know how" to select the proper pipe size. In our engineering department we have worked out a simple method for the selection of pipe sizes for high pressure lines which does not require special engineering training. We pass it on to any who may be interested with the hope that it will greatly simplify calculations which otherwise might be a headache.

This method is based on the following formula which is commonly used for this type of calculation:

Equation 1: $$Q = 2600 \sqrt{\frac{d^5 (P_1^2 - P_2^2)}{s\,l}}$$

In which

Q = Gas flow in cubic feet per hour
d = Inside pipe diameter
P_1 = Initial absolute pressure
P_2 = Final absolute pressure
s = Specific gravity of the gas
l = Length of pipe line in feet

The first step toward simplification was the substitution of the expression "h" for $(P_1^2 - P_2^2)$. Since this is equivalent to $(P_1 + P_2) \times (P_1 - P_2)$ it was a relatively simple matter to work out Tables 1 and 2 to show these values for a variety of initial pressures and pressure drops.

For an initial pressure of 20 pounds gage pressure and a final pressure of 15 pounds we have:

$$\begin{aligned}(P_1+P_2) &= 20+14.7+15+14.7 \\ &= 20+15+29.4 \\ &= 64.4\end{aligned}$$

$$\begin{aligned}(P_1-P_2) &= (20+14.7)-(15+14.7) \\ &= 34.7-29.7 \\ &= 5\end{aligned}$$

Since the difference in pressures need not involve consideration of atmospheric pressure, this last expression may be stated even more simply:

$$\begin{aligned}(P_1-P_2) &= 20-15 \\ &= 5\end{aligned}$$

$$\begin{aligned}(P_1+P_2) \times (P_1-P_2) &= 64.4 \times 5 \\ &= 322\end{aligned}$$

Hence, the value of "h" for an initial pressure of 20 pounds and a final pressure of 15 pounds is 322.

We have found it easier to use the simplified form of the formula

and select the value of "h" from the Tables:

Equation 2: $$Q = 2600\sqrt{\frac{d^5\ h}{s\ l}}$$

If the Tables do not have a sufficient range for any particular problem, additional values for "h" may be calculated by the above method.

Even with this simplification we still have a more or less complicated formula and this has been eliminated by the use of the chart (Fig. 1), on which the diagonal lines represent various sizes of standard pipe or tubing. A horizontal line (ABD) from a point (A) on the left hand scale representing the amount of gas flow in cubic feet per hour intersects a vertical line (CB) from a point (C) on the bottom scale representing the length of the pipe line in

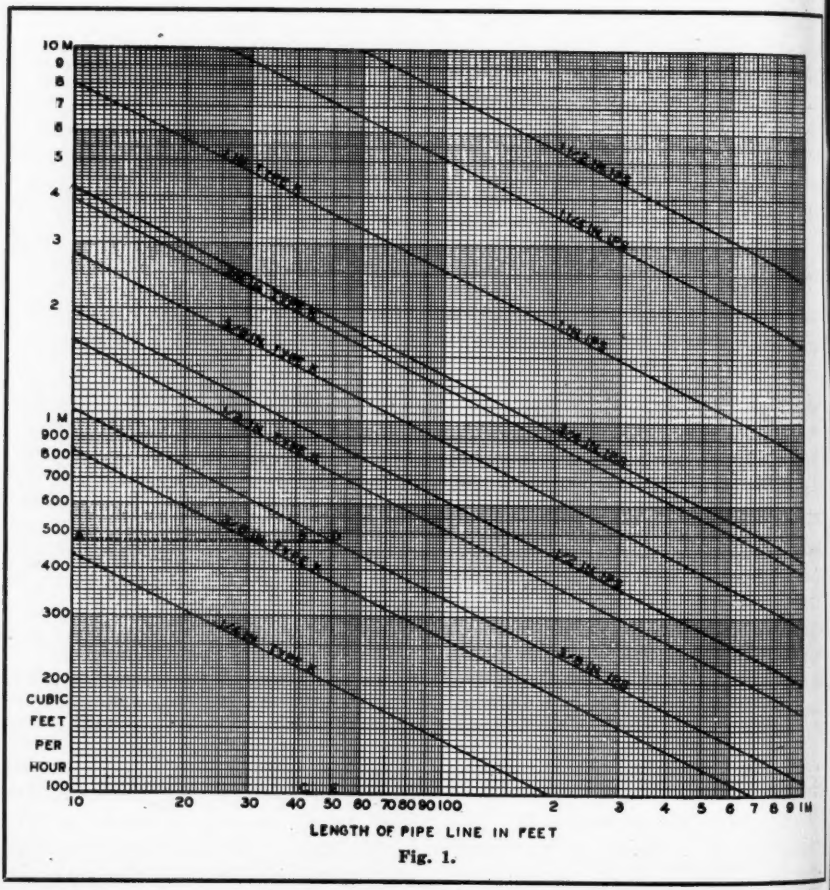


Fig. 1.

feet. The point of intersection (B) represents the size of pipe required. If this point does not coincide with any standard size of pipe or tubing the next larger size is selected.

The chart is based necessarily on an arbitrary value of "h." So that it can be used for any type of gas, this value of "h" has been taken as the specific gravity of the gas multiplied by 100. For propane "h" is 152, for butane, 195, etc.

In order to use the chart for other values of "h," correction is applied to the figure representing the length of pipe as follows:

Equation 3: $L_c = L_a \times \text{sp. gr.} \times 100 \div h$

L_c = Corrected figure to use with the chart for the length of the pipe line.

L_a = Actual length of pipe line given in the problem.

h = Value of "h" selected from the tables.

Usually the pipe size selected will be larger than the exact size required and sometimes it may be desirable to know the actual pressure drop for the size selected. To do this we find the point (D) where the horizontal line (ABD) intersects the diagonal line representing the pipe size selected. From this point (D) we draw a vertical line (DE) to a point (E) on the scale representing the length of pipe. The value of "h" is derived from the figure corresponding with point E as follows:

Equation 4: $h = L_a \times \text{sp. gr.} \times 100 \div L_c$

L_a = Actual length of pipe given in the problem.

L_c = Length of pipe line as read from the chart at point E.

With the value of "h" thus found, the approximate pressure drop may be determined from the Tables, or if the exact pressure drop is required, it may be found as explained under Equation 1.

The use of the chart is illustrated by the following problem, the solution of which is indicated by the dotted lines:

(a) What size pipe is required for a propane installation under the following conditions:

Maximum gas flow..475 cu. ft. per. hr.
Initial pressure..... 20 ft. (gage pressure.)
Final pressure ..... 15 lbs.
Pressure drop ..... 5 lbs.
Length of pipe..... 85 ft.
Specific gravity 1.52

(b) What is the actual pressure drop for the pipe size selected?

Solution:

Step 1. The value of "h" for the pressures indicated is 322 (Table 2).

Step 2. Since the chart is based on a value of 1.52 (sp. gr. of propane) x 100 or 152 correction must be made for this problem in which "h" is 322.

Applying Equation 3, we have:

$$L_c = 85 \times 1.52 \times 100 \div 322$$
$$= 41$$

In other words, the chart will give us the proper solution to our problem if we consider the pipe length as 41 feet instead of 85.

Step 3. Draw horizontal line ABD on the chart from point A which represents a flow of 475 cubic feet per hour. Draw vertical line CB from point C, representing a pipe length of 41 feet. These

lines, AD and CB, intersect at point B. The diagonal lines below this point represent pipe sizes too small and the next larger size, which is ⅜-inch standard pipe, is selected.

Step 4. To find the actual pressure drop, using ⅜-inch pipe, line AB is extended to the right to point D where it intersects the line representing ⅜-inch pipe. Drawing a vertical line from point D to the bottom of the chart we find that it intersects the scale representing the length of pipe at 50, designated by the letter E.

Step 5. Using Equation 4, we determine the value of "h" representing the actual pressure drop:

$$h = 85 \times 1.52 \times 100 \div 50$$
$$= 258$$

Step 6. Referring back to Table 2, under the 20 pound column, we find that the figure nearest 258 is 261.6 which represents a pressure drop of 4 pounds. Since 258 is less than 261.6, the actual pressure drop in our installation will be slightly less than 4 pounds. This will give us a final pressure of a little over 16 pounds instead of the required 15.

After you have read the article, see what you can do with the following questions, the answers to which will be found on Page 82.

●

QUESTIONS

1. What are the values of "h" for the following pressures?

a. Initial gage pressure..10 lbs.
Final gage pressure.. 8 lbs.

b. Initial gage pressure.. 8 lbs.
Final gage pressure.. 7 lbs.

c. Initial gage pressure..14 lbs.
Final gage pressure..12 lbs.

d. Initial gage pressure..80 lbs.
Final gage pressure..60 lbs.

2. What pipe size would be required for the following installation?

Gas-butane, sp. gr. 1.95
Length pipe line..100 ft
Initial pressure... 20 lbs. (gage)
Final pressure ... 18 "
Maximum gas flow 250 cu. ft. per hr.

3. What is the actual pressure drop for the pipe size selected in Question 2?

4. Propane gas, sp. gr. 1.52, is to be piped at 35 lbs. initial gage pressure through 150 ft. of ¾ in. Type K tubing. What will be the maximum capacity if the pressure drop is not to exceed ½ lb?

5. If, in the installation given in Question 4, the load is increased to 700 cu. ft. per hr., what will be final pressure?

6. 2500 cu. ft. per hr. of air must be piped a distance of 2500 ft. The initial pressure is 110 lbs. and a final pressure of 100 lbs. must be delivered. What size pipe will be required to do the job?

D. H. Dunning Named Manager Of Northwest Cities Gas Co.

Dale H. Dunning, of Walla Walla, Wash., has succeeded to the management of the Northwest Cities Gas Co.'s plants in Lewiston, Idaho, and Clarkston, Wash.

O. T. Nelson, former manager of that district, has been promoted to the management of the Yakima, Wash., office.

Liquid Transfer Made Safe With Right Pump Hook-Up

By A. N. KERR*
President, Imperial Gas Co., Los Angeles

THE transfer of liquid LP-Gas from tank truck to storage and from bulk plant to delivery trucks is a vital, everyday function in the liquefied petroleum gas industry. Every precaution that can be used to lessen hazards (of which overfilling and quick-filling is one of the worst) should become of general knowledge and followed carefully. Those who do not know how to hook up a positive displacement pump properly will find a safe method described here.

A. N. KERR

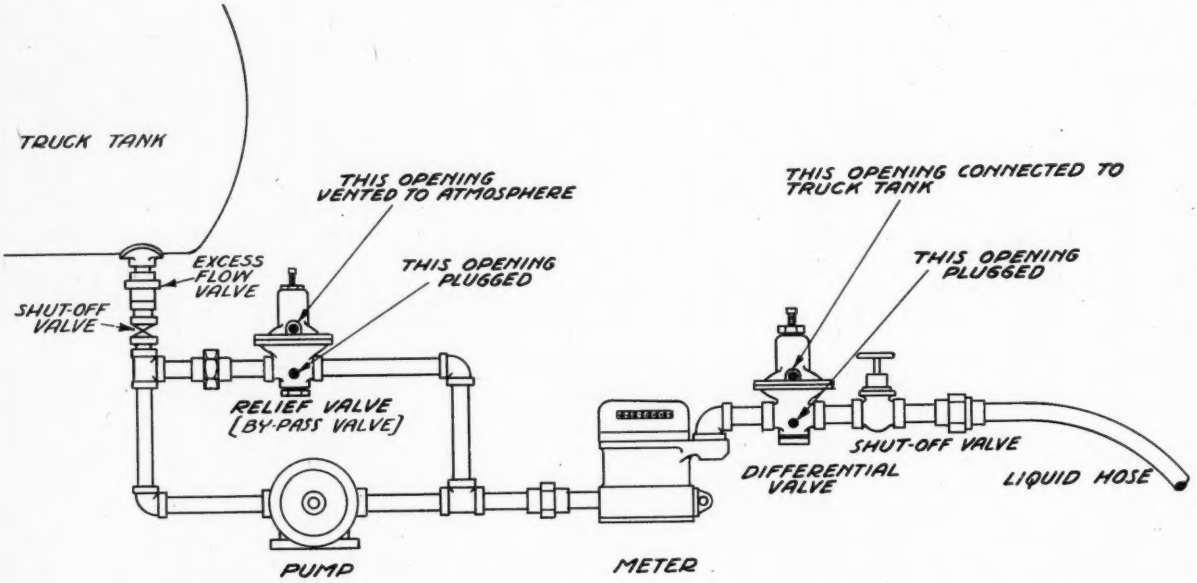
It is a common practice to use a standard spring loaded relief valve in the return, or by-pass, line from the pump, and, as this type of valve requires a high differential to operate, there are many cases where the outlet pressure of the pump exceeds the working pressure of the tank being filled.

In order to prevent excess pressure on the tank into which liquid is being discharged, it is advisable to use a diaphragm by-pass valve on the discharge of the pump set at, or below, the working pressure of the tank to be filled. (See Fig. 1.) This valve should not be influenced by the inlet pressure of the pump, or at least only slightly so influenced; also, this valve and by-pass line should be of a greater capacity than the pump. If the storage tank which is being filled has a working pressure of 250 pounds, set this diaphragm by-pass or relief valve at 225 pounds, then any excess pressure developed by the pump will be circulated through the relief or by-pass to the inlet of the pump and will prevent excess pressure being placed upon the tank.

In Fig. 1 there is also shown a differential valve. The differential valve is usually placed at the discharge side of the meter. It prevents the pressure in the meter from falling below the boiling point of the liquid in the tank from which the liquid is being with-

* Mr. Kerr, prominent in the butane-propane industry since its beginning in 1910, is a member of the Safety Committee of the national Liquefied Petroleum Gas Association. His hobby and his ideal is safety and he devotes much of his time to promoting better handling practices and writing articles to help prevent accidents. The accompanying article was prepared in collaboration with the Reliance Regulator Co. and the Smith Meter Co. Editor.

Fig. 1.



Drawing by E. F. Eckel, through courtesy of U. S. Flexible Tubing Co., Los Angeles.

Butane metering system using a diaphragm operated differential valve and relief (or pump by-pass) valve.

drawn. It thus prevents vaporization in the meter.

Without a by-pass valve, the differential valve will not prevent the tank, which is being filled, from bursting. It is important to remember this because the differential valve looks just like the diaphragm by-pass valve. It is a diaphragm valve, also.

You will note that there have been three kinds of valves used:

1. Standard spring type liquid relief valve. (Do not use these on the by-pass. They will merely add friction to the line and have no fixed control over the discharge pressure of the pump.)

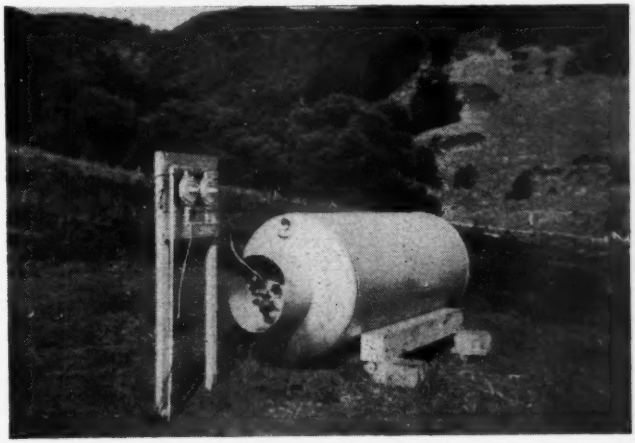
2. Diaphragm by-pass or relief valves, which are many time as sensitive. (These must be used on the relief or by-pass and set at a pressure no higher than the working pressure of the tank to be filled. Note: Vent relief valve to atmosphere.

3. Differential valves. (These are diaphragm valves, exactly like the relief or by-pass valves, except that the upper side of the diaphragm is connected to the tank from which liquid is being withdrawn. The spring is adjusted to create a differential pressure of 15 to 50 pounds above the pressure in the tank from which the gas is being withdrawn. Use a differential valve only on meter discharge to prevent vaporization and false meter readings.) Note: Keep the differential pressure as low as possible.

Summary

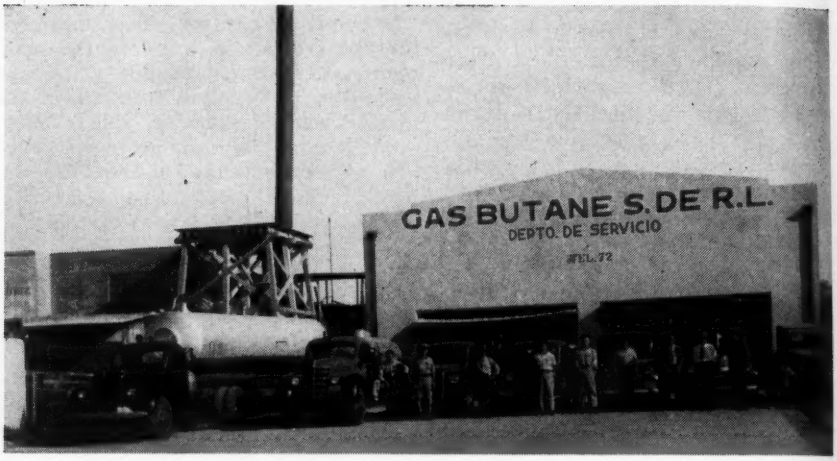
In our opinion, all trucks should be equipped with a diaphragm by-pass valve which should be set at a pressure no higher than the maximum working pressure of the tank to be filled. This type of valve is influenced only by the pump pressure, and it will open at a constant set pressure. Vapor differential valves and spring loaded relief valves both build up pressure as the pressure increases in the truck tanks.

And do not put either in by-pass.



The storage tank that supplies LP-Gas to the guests of "Lakeview Camp," on Lake Henshaw in San Diego county, California. This resort is owned and operated by Charlie and Mary Botti and the gas is used in the cabins for water heating, cooking, and heating the dining room.

Butane for Field and Home in Tijuana



ABOVE: Garage and shop at Tijuana where automotive conversions will be made. Personnel of company is lined up in front of cars.

BELOW: Office and appliance display room of Gas Butane Co., Tijuana, Baja California, with Alfonso Bustamante at his desk.

Duty-Free Gas Raises Mexican Living Standards

LIQUEFIED petroleum gas is assuming a major part in the agricultural, industrial and domestic life of residents of Baja California, Mexico.

This all-purpose, economical fuel is used in hospitals, bottling plants, candy factories and dehydration industries; it powers tractors and trucks and pumps water for irrigation purposes, and it is used for domestic cooking, water heating and refrigeration in many homes. Not its least important function is the widespread use in baking tortillas, Mexico's national bread.

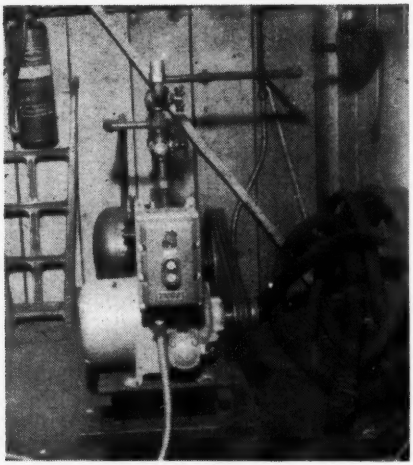
The development of LP-Gas in Lower California parallels the growth of Gas Butane S. de R. L. This firm entered business in Tijuana in 1938 with a stock of 10 bottles of butane, some regulators and vague hopes. The owner was Roberto Encinas. In three years he had acquired 380 customers and had proven the worth of the fuel to the community.

The gas goes in duty-free, as Mexico wishes to encourage the use of LP-Gas among its residents, feeling that it will have much to do with raising living standards and developing the country.

In 1941 the original company was sold for $10,000 to Alfonso Bustamante, the present manager, and Erasmo Anchondo, who now conduct it as a partnership. In that same year the new owners added 600 new customers to their list and there are now 1200 users being served a total of 36,000 gallons of gas per month.

The largest individual user of butane in Lower California is a

The bulk plant of Gas Butane Co., Tijuana, Mexico, showing (left to righ), the 4000- and the 10,000-gal. storage tanks; the 4000-gal. transport tank truck and the 1000-gal. delivery truck. Both trucks are equipped with Smith Precision pumps.



L. C. Roney 3-hp. differential pump, used at Tijuana plant for unloading transport tank.

chili dehydrating plant in Ensenada. It is served from the office of Gas Butane S. de R. L. in Tijuana. There is also a branch office in Ensenada.

Just recently, the Tijuana plant has been equipped to make butane conversions on gasoline operated engines and this department promises large returns as there is much demand locally by heavy duty units for LP-Gas as fuel. Roadmaster carburetion equipment will be used and Alfredo Gruel, who has been with the firm for three years, has completed a course of training in changeover practice at the Roadmaster factory in Los Angeles under the direction of Fred A. Tann.

Cylinders and tanks used are manufactured by several United States firms and one in Mexico City. Some customers have dual cylinder systems installed and others use the single cylinder plan. All equipment is owned by the company and loaned to the users.

Fuel is supplied through R. E. Logue and H. E. Lynn, of Wilmington Fuels, of Southern California. It is hauled to Tijuana in Gas Butane Co.'s own 4000 gallon tank truck purchased early this year.

Large AGA Ad Fund Will Aid Research Work

Plans for an expanded program of gas utility industry research, national advertising and general promotion calling for an expenditure of $1,400,000 a year for three years were approved in mid-September by the executive board of the American Gas Association. The new funds will be raised by subscriptions from gas companies.

"Post-war opportunities for the increased use of gas fuel in both homes and industrial plants appear to be unlimited," Ernest R. Acker, president of the association declared.

"In the field of research," he said, "there appear to lie immediately ahead great advances in the art of production, distribution and utilization of gas fuel. For example, our research laboratories have already demonstrated the fact that the gas flame can be made to travel instantaneously downward, in circles, around corners and in virtually any direction. The possibilities of this development alone are almost limitless.

"There will also be produced a greater variety of household equipment with new automatic features to the end that the all-gas kitchen of tomorrow which will be free of cooking odors, clean and cool, will fulfill the fondest dreams of Mrs. Homemaker."

Expanded LPGA Activities Call for Member Support

By LOUIS ABRAMSON, JR.
President, Liquefied Petroleum Gas Association

A NEW brochure, "Keeping the Flame Burning," which is a report of the 1944 activities of the Liquefied Petroleum Gas Association, has been sent to all Association members. Most of the activities are known by all or most of the members, but when they are all listed together, it adds up to a surprising total.

1944 has been a good year for the Association. The committees have functioned well, the results of their work having lightened the load of each and every one of us. If the Association did not exist and did not have these committees laboring in a broad way over our problems, each of us would probably be up to his neck in meetings, hearings and negotiations with the local and regional offices of all the government agencies related to our industry. The agonies of indecision, bad decision and misinterpretation would be our daily lot.

The same is true of our latest effort, the national campaign for publicity and promotion. Each of us could hire men to do this work in our community, but even though we spent many times the amount now expended, we could not arrive at the coordinated program now being carried out. The industry would present to the public a thousand different faces, resulting in a confusion of the public mind just

LOUIS ABRAMSON, JR.

when it is most important to us that the public know us better and know the advantages of our product.

The board of directors has sent each member a resolution upon which he must make a decision and cast a vote. The resolution provides that the annual dues be raised to create additional funds for many new Association activities, including publicity.

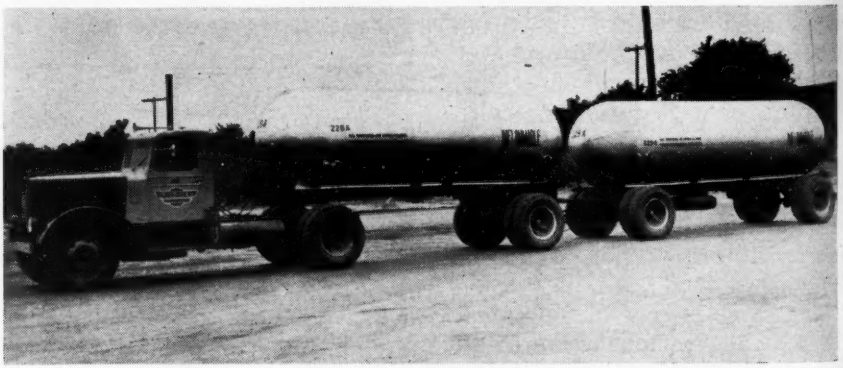
I urge all members to vote in favor of this resolution. I recommend this because I think it is best for the Association as a whole and for each member.

We have been trying to hit our target with an air rifle when a cannon is needed. We must get ready now for the days of peace ahead; days that will be confusing and hectic as we try to meet the accelerated demands of a public that has long been denied the extended advantages of our product.

This preparation must be paid for on a fair basis by all of the membership and the method of payment must be one that fits into the accepted accounting practices of the largest corporation and the smallest distributor or manufacturer.

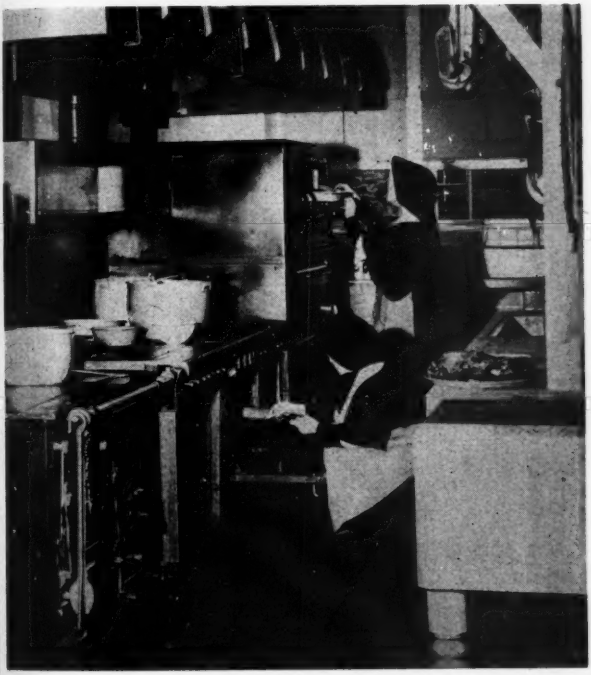
Please read the Association report carefully, from cover to cover. Then, I am sure, you will agree with your board of directors which has passed this resolution on to you for your vote. This is the way things are done under the democratic procedure.

If you did not, for any reason, get your copy of this brochure, write to the national headquarters of the Liquefied Petroleum Gas Association, 11 West 42nd St., New York, and ask that it be sent to you at once.



Fortier Transportation Co., Fresno, Calif., uses this Fruehauf-built butane tank trailer to haul from Maricopa and Kettleman Hills refineries to the San Francisco bay area. It has a total capacity of 8000 gals.

LP-GAS FIRES THIS HOSPITAL'S UP-TO-DATE COOKING EQUIPMENT



VILLA MARIA HOSPITAL

Wernersville, Penna.

EQUIPMENT USED

Left to right: 4' section Dougherty Coal Range, one fire and one oven; two sections Garland Range, one with and one without oven, on cabinet base; one #956 BLODGETT ROASTING AND BAKING OVEN; the latter two items LP-Gas fired. The coal range is for winter emergency use only.

Ovens now obtainable by civilians without filing delaying W.P.B. forms of any kind. Most of the restrictions of Order L-182 have been amended. NOW is the time to fill your long awaited equipment orders.

One Commercial Cooking Job Equals 20 Domestic Jobs!

(Based on average installations)

Specialized Cooking Tools, such as Blodgett Roasting and Baking Ovens, plus LP-Gas, provide mass food production FASTER, BETTER, AT LOWER COST. Write today for Blodgett's proven plan for soliciting commercial cooking installations: "The Commercial Cooking Load and How to Go After It."

The G. S. BLODGETT CO., Inc.

53 Maple Street, Burlington, Vermont

SECOND OF A SERIES IN *BUTANE-PROPANE NEWS*

Natural Gas Holder Explosion Destroys Cleveland AGA Laboratories

THE liquefied natural gas plant of the East Ohio Gas Co., Cleveland, exploded Oct. 20, resulting in an estimated loss of 100 people dead and many missing. Property damage may reach $15,000,000.

Homes and buildings for many blocks around were shattered and the AGA Testing Laboratories, two blocks away, across an open field, were almost entirely destroyed.

Jay Jenkins, publisher of BUTANE-PROPANE *News*, was in Cleveland at the time of the explosion and gives the following account of the tragedy, part of which was from personal observation and contact with those who went through the explosion, and part the result of early reports which time had not permitted to confirm when BUTANE-PROPANE *News* went to press:

"There has been much speculation

The East Ohio Gas Co. plant after the natural gas explosion.

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THE SUPERIORITY OF STEAM RADIATOR HEATING WITH THE FLEXIBILITY OF ROOM HEATERS.

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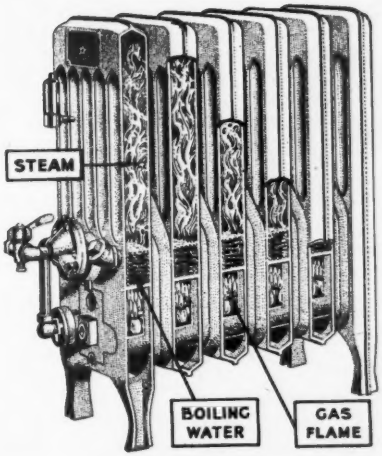
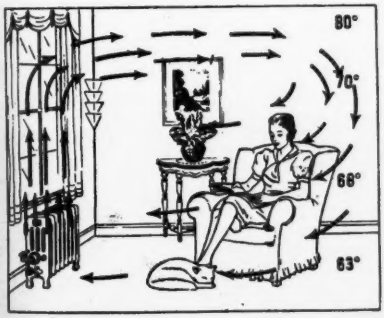
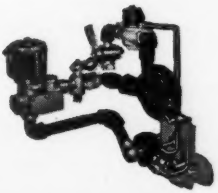
The Radiator That Makes Its Own Steam Heat With Gas







Non-Electrical Room Thermostat and Safety Pilot Valve

Clow Gasteam Radiators may be placed beneath windows or along outside walls so that the cold air is heated as it enters the room, thus preventing cold floor drafts.

Write for Descriptive Folder

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regarding the cause of the explosion, but its origin probably never will be known.

"There were four full holders. The 'old type holders' were not in use. Two of the holders are still standing.

"The people in the AGA Testing Laboratories first heard and felt a rumble like an earthquake and saw one holder separate and give forth a large vapor-like cloud which almost immediately was followed by an explosion and flames.

"The gas plant and its personnel are said to be a 100% loss. The AGA Laboratories building is a 75% loss, with equipment, furniture, etc., a 50% loss. Its four wet holders, standing by the Laboratories, are still intact. Eight employees and a representative of the Cleveland Heater Co., (Leslie Bixler), Florence Stove Co., and Chattanooga Implement & Supply Co., who were in the Laboratories, were seriously injured. Three of these 11 are not expected to live.

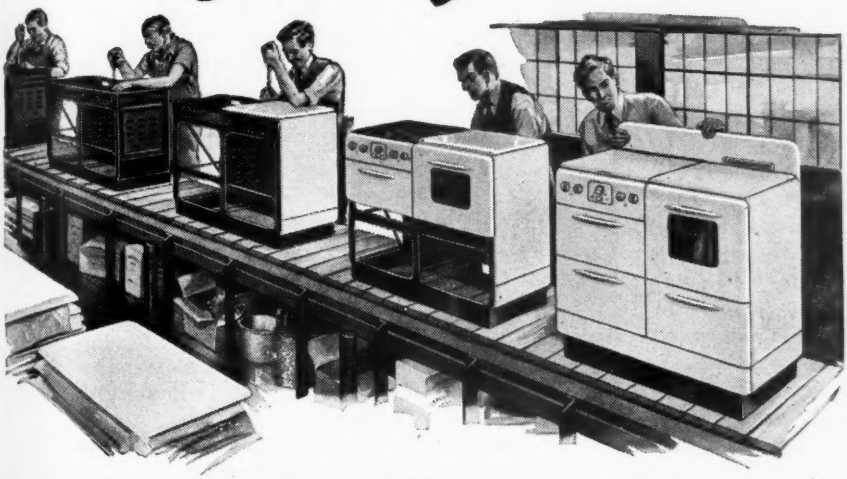
"When the employees at the Laboratories tried to leave, the entire north and west sides of the Laboratories were in total flames 100 feet high. They escaped through south side windows.

"R. M. Conner, Director of the Laboratories, announces that the rebuilding of the Laboratories will start as soon as is practicable."

The East Ohio Gas Co. holders contained liquefied natural gas and not liquefied petroleum gas. It was the first plant of its kind in the world and was built in 1940 to provide a reserve gas supply for Cleveland residents during the peak winter demand seasons. Natural gas has to be compressed to 1/600th of its volume in order to liquefy and the temperature under such conditions drops to 250°F. below zero.

This photograph illustrates the various types of trucks used by "Pyrofax" gas distributors to deliver gas to consumers.

WE DID IT BEFORE...
WE'LL DO IT AGAIN...
And fast!

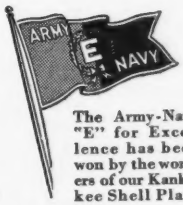


Watch How Quickly Florence "Know-How" Licks the Problems of Conversion

• In our 72 years, conversion isn't a new experience. Through a period of three wars, Florence engineers and executives have been licking tough production problems. And each time, Florence "know-how" has enabled us to do a capable job. Our designers and engineers have plans ready for all our first postwar models. As conversion makes it possible, Florence streamlined production methods can be depended on to get the new, attractive, modern ranges out to you rapidly.

FLORENCE
LP—GAS RANGES

★ ★ ★ ★ ★ ★



The Army-Navy "E" for Excellence has been won by the workers of our Kankakee Shell Plant

Work for America's Armed Forces is still our No. 1 job

FLORENCE STOVE COMPANY . . . General Offices and Plant: Gardner, Mass. Western Offices and Plant: Kankakee, Ill. Sales Offices: No. 1 Park Avenue, New York; 1459 Merchandise Mart, Chicago; 53 Alabama Street, S. W., Atlanta; 301 No. Market Street, Dallas.

Industry Potential: Millions of Customers!

Will Dealers Be Ready to Sell?

By ELLSWORTH L. MILLS

Vice President, The Bastian-Blessing Co., Chicago.

WHAT will the LP-Gas industry do and be in the postwar period? It is said there are millions of potential domestic consumers waiting for us to get the gas and equipment and appliances to supply them. How many of these will eventually go electric because we are not prepared to take care of them?

E. L. MILLS

To arrive at an answer to these questions we must peer intently into the future. The issues are cloudy and to some extent uncertain, but we know we must stop dreaming and start *doing*.

Those who ultimately will achieve the greatest success are those who act now, keeping their set-ups flexible enough to change as conditions change.

Fuel Supply

There already exists a cloud of problems in connection with the future availability of propane, butane and isobutane. The factors to be considered appear somewhat as follows:

(a) Production facilities for natural rubber have been largely destroyed. The manufacture of synthetic rubber must necessarily be continued on a large scale, and synthetic rubber requires tremendous quantities of butane.

(b) Aviation gasoline and higher octane gasolines will be in greater demand than in the pre-war period. Again, the manufacture of aviation gasoline needs large quantities of butane.

(c) The war has resulted in the development of chemicals and synthetics which require huge quantities of both propane and butane.

(d) Because of war demands, production of these products, especially butane, has been increased tremendously. With the cessation of hostilities the demand for many synthetics and aviation gasoline will naturally drop. This will result in an over-supply of these gases, particularly butane, in the immediate postwar period. How-

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ELLSWORTH L. MILLS, vice president of the Bastian-Blessing Co., Chicago, delivered a paper before the Southern Section LPGA, meeting in New Orleans in September that should spur the industry to prompt action on many important, current problems which will have great influence on postwar conditions.

Entitled, "The Postwar LP-Gas Industry", the address is far too long for publication in its original form, but the most essential points are set out in the accompanying abridgment. They are worthy of the careful consideration of every member of our industry.—Editor.

the future be like...and WHY?

DISCUSSION NO. 9

Even Orifices on Gas Range Valves will be improved

All the gas that is used on a gas range flows from orifices on the valves or fittings. Orifices are as important as the appliance itself—because they control the proper amount and flow of the gas. If the orifices are not right, poor adjustment and poor operation result. Orifices on the Range of the Future will be the best that can be devised.

The prime requisite of an orifice is *accuracy of flow*. The superior orifice will be precision-drilled to exacting limits . . . will be carefully inspected and individually flow-tested . . . to insure correct capacity.

The other major essential of an orifice is *dependability of operation*. The superior orifice will be protected . . . protected by a counterbore at the orifice opening . . . so that it can never be damaged. Once it is drilled right, it stays right. On adjustable-type orifices the counterbore will also keep the adjusting pin below the surface . . . will keep it protected so that it is always properly aligned with the orifice opening.

These advantages of the "precision-engineered" orifice will eliminate the undesirable results brought about by servicemen reaming out or peening down orifices in a vain attempt to adjust gas burner flames to the same rating and appearance. They will likewise prevent the development of inaccurate flow and poor injection with flat-faced adjustable orifices as a result of damage to the orifice opening or the adjusting pin.

The advances in design of such important functional parts as the orifices controlling the gas flow will improve the performance and dependability of the Gas Range of the Future.

HARPER-WYMAN COMPANY

8562 VINCENNES AVENUE

CHICAGO/20, ILLINOIS

ARMY E NAVY

HARPER BURNER SYSTEM

2-burners-in-1

ever, because of new uses for our gases, the value of them at the refinery has increased; and with the gradual recovery of industry and prosperity, demand for liquefied petroleum gases for uses other than domestic service will be on the increase. In 1943, domestic consumption of LP-Gases was 340 million gallons, whereas industry used 330 million gallons. Some of the tremendous amounts of these gases used by the chemical, aviation and other industries will be available for the domestic consumption market with the let-down in industry war production.

We must anticipate an increased cost of the gas at the refinery. Some experts believe that at the refinery butane may become more valuable than propane.

Because of the wide difference of opinion among producers, every distributor must analyze his own particular problem in reference to cost and availability of the fuel at a conveniently located source of supply.

Publicity

What kind of publicity does our industry want and what kind is it going to get? Are we going to permit the unfavorable publicity that we have been receiving?

Why have we had adverse publicity? Because our accidents are spectacular. For that reason this type of publicity is out of all proportion to the number and severity of accidents involving our industry. In confirmation of this statement, the National Fire Protection Association, in a pamphlet entitled "Facts About Fire," gives us some data on the causes of fires:

No. 2 on the list are 55,000 fires caused by electricity (Fig. 1). The losses involved were $26,000,000. On the other hand, the total number of fires caused by **all** gases and gas appliances, was 4000, with a total loss of $1,900,000. These figures do not include accidents other than fire accidents. They do not include deaths and injury resulting from defective electrical equipment. What can we do about this in our postwar planning? Your association is conducting two aggressive campaigns to change our publicity from adverse to favorable.

Your committee on safety is doing an outstanding job in pointing out easy ways and means of avoiding accidents and the damaging publicity which always follows. That committee's work is of no avail unless each of us, individually and collectively, gets behind the program 100%. The acceptance of our product in the postwar period will be directly proportional to the degree to which you carry out the Safety Committee's program.

As you all know, our publicity committee has already done a marvelous job in educating the public to the desirable features of LP-Gas, and this program cannot accomplish all of the desired results unless we get behind it wholeheartedly.

The Future Demand

That there is a tremendous market awaiting us in the immediate postwar period is irrefutable. Fig. 2 confirms this.

The industry up to 1941, when Government restrictions started, had sold and installed an increasingly large number of installations each year since its infancy. It is logical to conclude that a large part of the lag in new installations since 1941 represents a tremendous backlog of sales awaiting us immediately Government restrictions are abolished. The only question, therefore, is—to what extent is our industry preparing to supply this immense demand?

In addition to the backlog of prospective sales, there are two other markets that have been developing so fast that many of us have not realized their importance. One is the new fringe of the city market being created by the movement of city dwellers to more spacious living quarters.

The other great market is the farm market. I think all of us know that the farmer is today in his best position in American history. He has had several good years, during which he could not buy the things he wanted, and now he has most of his debts paid off, money in the bank and unlimited

"FACTS ABOUT FIRE"

Published by National Fire Protection Association

Annual Fire Losses by Causes

Approximate Estimate from State Fire Marshals' Reports

1.	Unknown	78,000	$114,000,000
2.	Electrical	55,000	26,000,000
3.	Exposure	37,000	18,000,000
4.	Spontaneous ignition	19,500	15,400,000
5.	Chimneys, flues - defective or overheated	58,000	15,000,000
6.	Sparks on roofs	79,500	14,000,000
7.	Smoking	87,000	14,000,000
8.	Incendiary, suspicious	8,500	11,000,000
9.	Explosions	10,500	9,000,000
10.	Defective or overheated heaters	19,000	8,600,000
11.	Lightning	24,000	8,500,000
12.	Miscellaneous	11,500	6,800,000
13.	Lamps and stoves	22,000	5,200,000
14.	Combustibles near heaters	15,000	4,500,000
15.	Rubbish	26,000	4,000,000
16.	Flammable liquids, misc., home dry cleaning and starting fire	20,000	4,000,000
17.	Matches	22,000	3,200,000
18.	Torches, welding	8,000	2,700,000
19.	Children and matches	23,000	2,500,000
20.	Hot ashes, coals	16,000	2,500,000
21.	Oil Burners	7,000	2,000,000
22.	Grease, tar, etc.	10,500	2,000,000
23.	Gas and appliances	4,000	1,900,000
24.	Open lights, flames, sparks	7,500	1,700,000
25.	Electrical appliances, motors	10,000	1,500,000
26.	Sparks from machinery, friction	3,000	1,300,000
27.	Thawing pipes	1,000	350,000
28.	Fireworks	1,500	200,000
29.	Films (Nitrocellulose)	1,000	150,000
	Totals	685,000	$300,000,000

Fig. 1

credit. More important, he is in a mood and temper to modernize. Unless we are to lose all of this business to competitive industries we must prepare to fight for it. It can be profitable business.

The combination of these two great new markets, plus a pick-up of our normal growth—the present backlog—should make it possible for our industry to more than double itself in a single year. It may be my figure is too conservative, for we have shown astonishing increases in this industry before without having the advantage of these unusual conditions.

Postwar Equipment and Appliances

Now let us look at the possible trend of demand in the postwar period on the part of our consumer customers. In the transition from city to suburban or rural life, the housewife naturally looks forward to having many, if not all, of the city conveniences in her home, and don't forget that the hard-working farm wife also looks forward to enjoying the same conveniences her city cousin has had in the past. Both of these groups are dreaming of and wanting modern kitchens.

Let's be doubly sure these kitchens will be supplied with the most efficient means of cooking, refrigeration, and hot water heating available, namely, LP-Gas.

If we are to continue to progress, we will not be penny-wise and pound-foolish, but will wisely invest our capital in supplying attractive appearing LP-Gas systems that will be trouble-proof, will maintain maximum safety, and will insure continuous and uninterrupted supply of gas to the appliances. Our industry must give serious thought to changing its practice of ruining a home's landscaping and exterior by installing unsightly containers on the premises of its customers. There is no good reason why our systems cannot be so designed as to add to, rather than detract from, the beauty of the home and its surroundings.

In carrying out such a plan we cannot use new and untried equipment. We have heard a great deal about new lines of synthetic materials, revolutionary designs, etc.

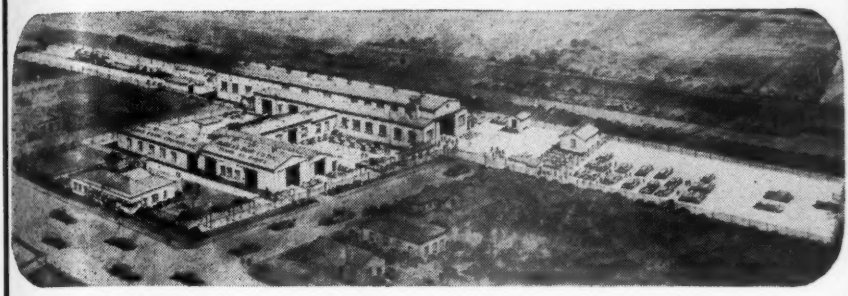
Certainly we all want to take advantage of new materials, advance designs, and improved manufacturing facilities where proven and profitable advantages will result.

But when selecting equipment for immediate postwar use, it will not prove profitable to experiment with new and untried products and materials which might result in costly replacements and—more important—dissatisfied customers. Those manufacturers who have your interests in mind, have only considered, in their postwar planning, getting into production fast to furnish you with products which you know, and they know, from past experience, will give satisfactory performance in the field.

New Products Must Prove Themselves

Manufacturers fully recognize the advantage of some new materials and they have given thought and study to new designs and improvements. Undoubtedly, new products and new designs will be available in the course of time. However, we cannot expect that satisfactory, field-tested, new products will be available in the immediate postwar period.

We believe, that postwar planning must necessarily be divided into two phases, first, supplying immediate requirements as quickly as possible. Taking care of these immediate requirements is essential to insure that this country passes through the reconversion and re-employment period in the minimum amount of time. The



FACILITIES To Do the Job!

Manufacturers and fabricators of all types of welded sheet and steel plate products. Facilities to do the job whether large or small. Engineering skill backed by constant research. All equipment is designed, manufactured and supervised by men who have had many years experience in steel plate construction.

- ***A good point to remember—Economy Butane Systems are safety engineered . . . built strictly in accordance with A.S.M.E Code!***

TANKS BY BANKS

DALLAS TANK Company, Inc.

201-5 W. Commerce St., P. O. Box 5387
Dallas, Texas

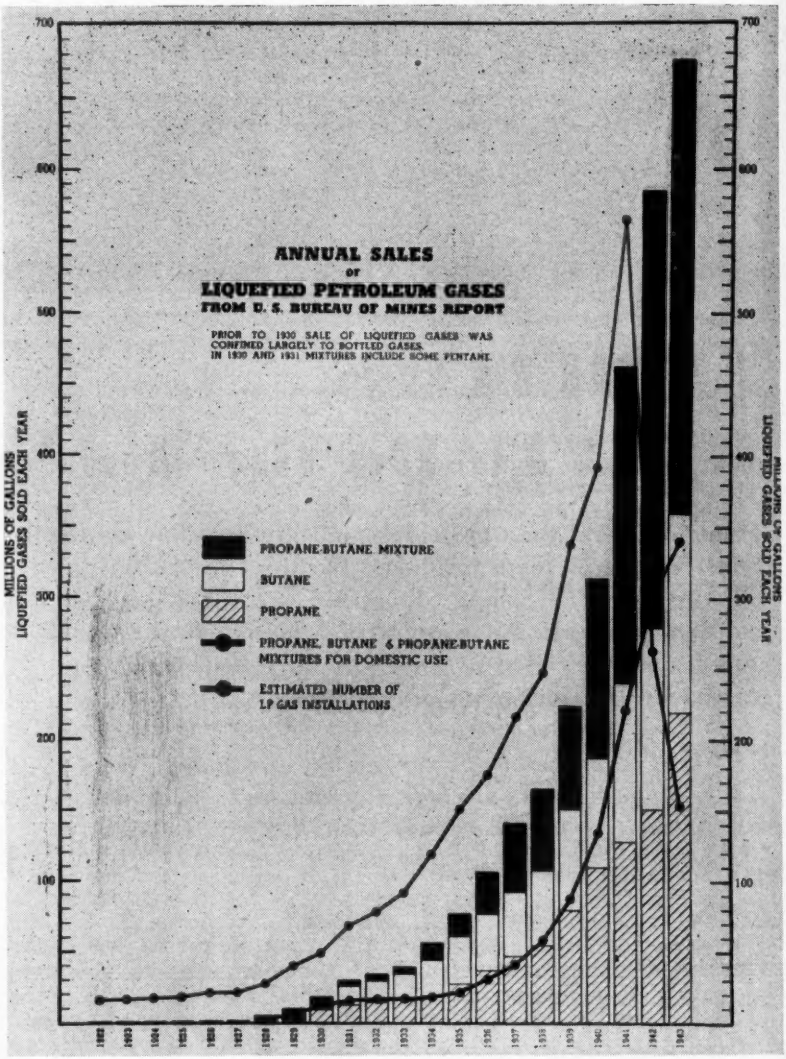


Fig. 2

This graf gives at a glance a comprehensive view of the great strides the LP-Gas industry has made over a relatively short period.

second phase involves the use of new products after they have been thoroughly field-tested.

One of the comparatively recent developments in this respect, which is the result of war production, is the use of spherical containers. Such a container can very easily be made a part of the landscaping of the premises. Portable containers can very well be kept painted a color that will not detract from the exterior. Further, portable containers can readily be housed in such a manner as to give a streamline and attractive effect.

Higher Pressure Vessels

Operators who desire to be in a position to use the fuel that will prove the most economical over a long period of time and regardless of trend, have decided to use a container that will be satisfactory for butane, butane-propane mixtures, or propane. Such a program may well prove to be sound insurance against having to make a radical and expensive change-over later and may not prove to be serious from a cost standpoint in that, as a result of war demands, many container manufacturers now have fine line-production facilities which did not exist in the pre-war period.

There is another school of thought within our industry that is thinking in terms of changing over from batch vaporization to flash vaporization systems, using either butane or butane-propane or butane-isobutane mixtures, and is planning various methods of vaporizing these fuels. Obviously, to gain full advantage of this plan, the vaporizer must be safe and efficient and not a makeshift. The claimed advantages under these conditions are as follows:

(a) Supplying the appliances with a uniform product as to Btu. content.

(b) Avoidance in a properly designed and installed system of troublesome condensation.

(c) Uniform performance whether the container be installed aboveground or below-ground and regardless of changes in atmospheric temperatures and of the fluctuation in the demand.

A large number of operators, who formerly were primarily interested in their profit on the sale of new installations and only remotely interested in the resulting gas load, have realized by bitter experience during this war period that to insure a continuously profitable business they must control the gas load. Having arrived at this conclusion, these operators are arranging for re-financing so that in the postwar period they will be in position to lease their systems to the consumer and thus control, to a large extent, the gas load, rather than to sell the installation outright to the consumer. In the latter case little or no control is retained over the truly profitable part of their business.

Pre-Postwar Doing

We are now in position to take action that will insure our ability to start promptly to capture our share of the postwar consumer's dollar. The consumer can't wait long to spend it. Other industries are trying to get their share of that dollar. You can't wait for new developments. You must be prepared to get into action as soon as possible after restrictions are lifted.

You can and must, for your own good, do something now. You must place some postwar orders immediately. Let's be realistic about this. During the dark, dismal days of the early stages of the present war, we heard much about this country being unprepared, and about "too little and too late". Where was our armament when the enemy was "getting there fustest with the mostest"? The material was

being mined, smelted, cast, drawn, rolled and forged, and the equipment machined, inspected, assembled, tested, and finally shipped.

All of this takes time—lots of it. Therefore, I say to you, this is the one definite thing you can do in your postwar planning and in so doing you will profit from this country's experience in planning for war.

Certainly the demands of postwar, peace-time America can be filled no faster than the demands of war. The problems of supplying these two demands are largely identical. The products are largely similar. The time required to get forgings, rod stock, castings, steel, chemical products, and the time required to ship, receive, machine, assemble and test, is the same.

Necessary Steps Are Numerous

You can't get away from the fact that a typical LP-Gas regulator and cylinder valve together involve 65 separate, special parts, including 2 castings, 1 die-casting, 1 forging, 7 chemical compositions, 18 different sizes of rod stock, and other gadgets, to be procured from 13 different sources, all of which must be shipped to the LP-Gas equipment manufacturer **before** he can machine them to produce the finished products for you.

The manufacturers of the equipment and appliances which you will require immediately after the war cannot place their orders for the materials until they know the quantities of the specific items you will require. Normal delivery of material varies between 2 to 7 months after order, depending upon the material. For example, cylinder valve body forgings require 90 days for delivery, and then must still be machined.

Some of you may well say that you do not know now what you will need in the immediate postwar period. The very pertinent question, however, is "will you have any better idea as to what you will require the day after the armistice"? Of course not!

Then why not be smart and analyze the trend which your requirements took in the pre-war period and place a conservative order with your suppliers for equipment and appliances to take care of your best guess as to what you are going to need in the first 3 to 6 months of the postwar period? That will give your manufacturers a chance to place their orders with their suppliers of materials prior to the mad rush of demand in the immediate postwar period.

I ask you: What have you to lose?

P-98-b Amendment Permits $100 Value Replacements

An amendment of Sept. 28 to Direction 2 to P-98-b provides that a petroleum operator may now use an AA-3 rating and MRO-P-3 allotment symbol to secure up to $100 worth of material to make each installation or replacement of equipment, as defined and as permitted by PAO-12. However, the rating and symbol may not be used to secure the equipment which is being installed or replaced.

As amended, the direction now permits an operator of a service station or retail outlet who does maintenance or repair work for consumers, as well as an operator who does such work for a service station or retail outlet, to use the AA-3 rating instead of the AA-5 MRO rating for upkeep or restoration of structures, equipment, or material of a service station or retail outlet.

However, the AA-3 rating may not be used for operating supplies. The allotment symbol MRO-P-3 remains available for controlled materials for MRO.

"Never mind little bride, some day you'll have a range that really cooks

...and it's going to be a brand new *Magic Chef*"

THE DAY IS COMING—and let's hope it will be soon—when you and your husband can settle down in a "Happiness House" of your very own!

Then you can stop worrying over the uncertain performance of that old-fashioned stove. Because, of course, he's going to insist on getting you a range that *really* cooks—a sparklingly new Magic Chef. It will be *beautiful* as well as convenient and practical. And so easy to use, with gas, the *ideal* fuel!

Until our war job is done, we can't build your new Magic Chef for you. But it will be ready just as soon as possible after victory. And it will be worth waiting for!

★ ★ ★

Do you live beyond the gas mains? If so, we assure you that fine, new Magic Chef ranges will be available after the war for "Pyrofax" Gas in eastern and central states and for other L. P. (bottled and tank) gases elsewhere. ★ ★ ★

One of American Stove Company's plants is building a gas range in the model permitted by W. P. B. If your immediate need for a range is urgent, ask your dealer or gas company how you can get one.

★ ★ ★

This "CP" seal on your post-war Magic Chef will assure you of "Certified Performance" in your cooking. Look for it.

AMERICAN STOVE COMPANY
Cleveland, Ohio

You can plan on owning a Magic Chef like this after the war

Magic Chef

THE RED WHEEL GAS RANGE WITH THE LIFETIME BURNER GUARANTEE

Copr. 1944 American Stove Co.

THE SATURDAY EVENING POST · GOOD HOUSEKEEPING
WOMAN'S HOME COMPANION · ARCHITECTURAL FORUM
PARENT'S MAGAZINE · BETTER HOMES & GARDENS

45,265,474 READERS

Magic Chef NATIONAL ADVERTISING *is doing these things*

1 Maintaining outstanding public preference for Magic Chef Gas Ranges.

2 Presenting the Magic Chef story to your best postwar prospects against a background of timely, human interest situations in present day American homes.

3 Informing your prospects that Magic Chef gas ranges will be available for regular city gas service and L. P. bottled or tank gases.

4 Creating the desire in your prospects to have a Magic Chef Gas Range.

The advertisement shown at the left appears in the October 14th issue of THE SATURDAY EVENING POST and in other leading national magazines.

For franchise information on Magic Chef Gas Ranges, write your nearest American Stove Company office.

AMERICAN STOVE COMPANY
4901 Perkins Avenue • Cleveland, Ohio
New York • Philadelphia • Cleveland
Chicago • St. Louis • Atlanta • Los Angeles

Magic Chef

RED WHEEL GAS RANGES
AND HEAVY DUTY GAS COOKING EQUIPMENT

ARMY (E) NAVY
Awarded to Quick Meal Stove Co. Division of American Stove Co.

The Chef is the Man to Sell

By C. C. TURNER
Special Representative,
Butane-Propane News

I HAVE previously stated that chefs possess that which is known as an "artistic temperament," and this is generally so. At first it may be difficult for you to comprehend how the atmosphere of a commercial kitchen is conducive to this condition of mind, but if you linger long and are observant you will grant that here is art struggling for existence under the limitations of time, place, and commercial cupidity.

In the larger eating establishments the chef rarely if ever lifts a finger to do any of the actual cooking, but supervises all that goes on within the kitchen. Other individuals have certain duties to perform and are known as first cook, second cook, baker, etc.

Usually the chef actually attends to some part of the cooking. The amount of his physical labors varies in proportion to the size of the place and its prosperity. In the so-called "hole-in-the-wall" establishments he may be proprietor, waiter, cashier, dish-washer and bus boy, all in one.

Before opening the door into the chef's sanctum, let us ponder on the many causes of his reputed temperament. Put yourself in his place before a group of hot monsters belching forth steam and odors in a temperature that may be 100° F. or more. Try cooking a dozen different things at one time. Keep in your mind the ordering of supplies. Surround yourself with not too efficient help. Have the results of your best efforts returned to you occasionally by over-exacting patrons. Realize that you are working against time and that every move must count.

Distractions Never End

Do it all to the accompaniment of clattering dishes, waitresses bawling out their orders, and countless interruptions and distractions. Right at the busiest time have the electric refrigerator go hay-wire, the second cook fail to report to work, the meat order fail to arrive on time, the bus boy break a trayful of dishes and the kitchen cat get into the whipped cream! If you have succeeded so far in maintaining an outward calm unflavored by expletives you deserve a medal, and if you can put off an equipment salesman with such sweet words

BUTANE TANKS AND SYSTEMS

Our 30 years' experience as fabricators of sheet and plate steel, our modernly equipped plant, plus mass production and new, improved welding methods—these enable us to meet wartime demands for Butane Tanks and Systems, and other fabrications, will enable us to serve our customers with maximum speed and efficiency after the war is over.

as "Can't you see I'm busy now? Get out of here!" then you are more than human.

So let us not presume upon good nature by intruding upon the chef immediately before or during meal time.

You Approach the Chef. Let us assume that the proprietor is not averse to some new equipment, and that the time is opportune for you to meet the chef. It is quite certain that the proprietor has expressed his wishes as to the type of equipment to be purchased, but it must have the chef's O.K. if the chef is going to stay, and it is quite possible that in your interview with the chef you may uncover other equipment needs and be able to sell them.

Unless you have been requested to call for the purpose of discussing some particular piece of equipment, don't make the mistake of barging in, catalog in hand, like the proverbial Bible-toting missionary pursuing a benighted heathen through the jungle to save his soul. Neither consider yourself as something akin to the answer to a maiden's prayer. Enter the kitchen quietly. Size is up at a glance. Keep out of people's way. Remember that old Rule No. 1 of wholesale selling: That *a retail sale always takes precedence over a wholesale sale.* In other words, the filling of customers' orders for food come before you do, even if you were there first. Don't plank your catalog down in anybody's way or stand where anybody has to walk around you in the performance of his duties.

It is a mistake to start in by telling the chef what he needs. It is also a mistake to give the chef the opportunity of starting a train of negative answers by asking him any such banality as, "Do you need any cooking equipment today?" The approach of one of the most successful equipment salesmen that I have met is to start the sales effort by asking the chef his opinion about a certain piece of equipment which he already has. Often this results in his letting his guard down through an admittance that it isn't all that he could wish.

Don't start in by calling the chef "George," for all chefs aren't named George any more than all salesmen are named "Sam." People do like to hear their names, but they usually like to confer upon you the privilege of calling them by their first names as an indication that you have earned their confidence. You like to be respected and so does the other fellow.

Leading on the Prospect

If, in your conversation, some particular piece of equipment is not of interest it might be well to let the chef look through your catalog. If you have something to suggest it is well to put it in question form, such as, "Wouldn't something like this save you a whole lot of work?" or, "What is your opinion of the Blank broiler?" Perhaps his opinion of the Blank broiler may not be very high, but don't tell him directly that he is "all wet." It is better to tell him that you have never heard that criticism of it before, and that you have heard many praise it to the

skies. Mention its good points and show him some photographs of actual installations where it is being used.

Here can follow your most telling sales argument and it is in the form of these very pictures. Photographs coming from some famous chef or hostelry are much more effective than those put out by a manufacturer, or plans drawn by a factory expert, no matter how clever and well versed they may be on the subject of commercial cooking equipment. The order of the Pot and Skillet is something very real and powerful, in spite of its lack of organization. The word of a famous chef carries more weight than all the equipment engineers in the United States.

Arranging the Kitchen. Whether you have sold one piece of equipment or that for entire kitchen, the time comes when it must be decided where it is to be placed. What might be an ideal arrangement may be impossible because of the space available or its shape. Don't deprive the chef of the pleasure of planning the arrangement of his own kitchen, or at least do not let him know that you are planning it for him.

A very practical way of making a kitchen arrangement is first to lay out the kitchen floor space on a piece of graph paper, having each square equivalent to so many inches. Squares of colored cardboard should then be cut to scale of the over-all dimensions of each

▲

An LP-Gas range doing heavy duty restaurant cooking in a New England town. Robertshaw thermostats control heat of ovens.

▼

piece of equipment. These can be placed upon the graph paper in any number of arrangements until the most suitable one is obtained. The position of each piece of equipment should then be traced onto the graph paper, dimensions carefully noted upon it, and this rough sketch should be taken to your draftsman for the making of blueprints. Don't forget to note the location of doors and windows for his benefit, and sometimes the way in which a door opens is extremely important.

I suggest that you instruct him to prepare his drawings so that they may be reduced to a standard 8½ in. x 11 in. size. I prefer this to the bulky plans which sometimes come out of the drafting room, for the reasons that they fit nicely into any standard file assembly or specification such as you will probably prepare for your customer and they are less likely to be torn by repeated handlings.

I also suggest that his tracing be inked instead of merely penciled, as the resulting blueprint will be much more distinct and pleasing in appearance. A telling sales tool is to have appear on the blueprint words to the effect that the plan has been prepared by your company especially for such-and-such a restaurant or hotel. This is subtle flattery to the ego of your prospect. Before assembling the specification, better read Chapter 2 again!

Fundamentals of Arrangement. The arrangement of a commercial kitchen is a problem for a traffic engineer, and we can learn much from those who have made a study of the cross currents of human movement which exist at the junctions of our busy city streets. Or, imagine yourself placed in a room in which there are a number of objects which you must dust in a regular sequence. If you wish to save steps your path about the room will be a circle. If three other people are to help you in this job, you will divide the room into four equal parts and each person will travel in a circle in his particular part. The circumferences of the circles will possibly touch, but they will not overlap.

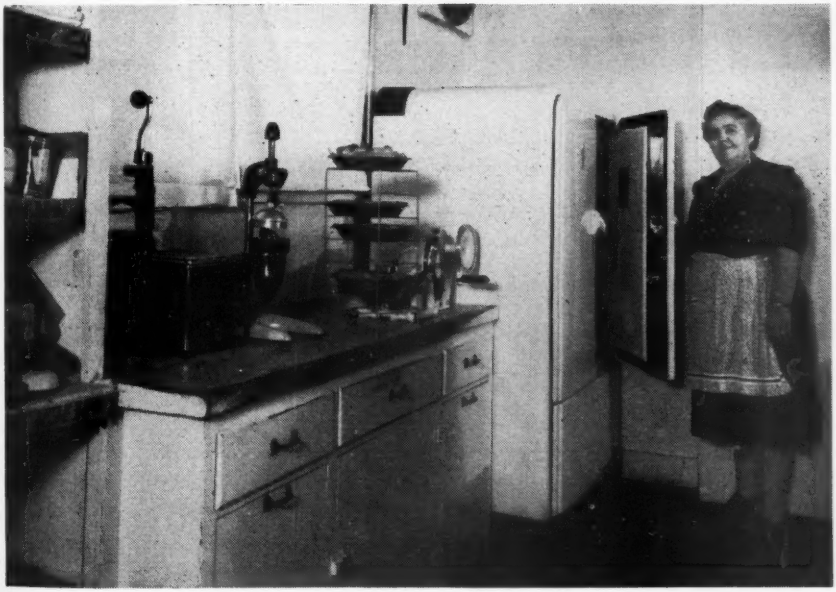
Here you have in simple form the problem which exists in a commercial kitchen. Usually there are anywhere from two to a hundred or more people either employed there or having access to it. It is the place where the waiters or waitresses must pick up their orders. The arrangement should be such that it saves steps, also it must be so planned that people do not get in each other's way. Foodstuffs should be available in the sequence of their demand. Back-tracking should be avoided. Not only does a planned arrangement eliminate confusion, but it also prevents accidents and saves time.

A Study of a Typical Commercial Kitchen. Let us study the schematic drawing of a commercial kitchen as shown in Fig. 1. This has purposely been prepared with much detail omitted in order that fundamentals may be more clearly illustrated. Let us first consider this arrangement from the angle of the chef or cook. The space in front

of the ranges is reserved exclusively for him, and no other employee has any need to invade it. His position is such that he can readily see all that goes in or out of the refrigerator. He is placed so that he can supervise the preparation of vegetables in the vegetable room. He can see all that goes into the stock room, and nothing can go out of it without his knowledge excepting that which goes over the counters to the waiters or waitresses from the salad room or bakery.

Clean silver, dishes, and linen must pass before his watchful eye as they pass before the steam tables. He can procure the foodstuffs he needs for preparation from either the refrigerator or stock room with a minimum of steps. Because of the counter windows which open into the bakery, salad room, and dishwashing room, every employee can be observed at any time. Butter, eggs, and shortening, all of which contribute largely to food expense, can be removed from the refrigerator only with his knowledge and consent. He can work with a minimum of disturbance, and at the same time be sure that others are doing their part.

If the establishment is large enough to warrant it, there would be a butcher shop which would probably be located where the vegetable room has been placed, and



A commercial Servel gas refrigerator in the Bryngelson cafe, Detroit Lakes, Minn. Propane is served this account by Henry Fligelman, of Detroit Lakes Gas Co.

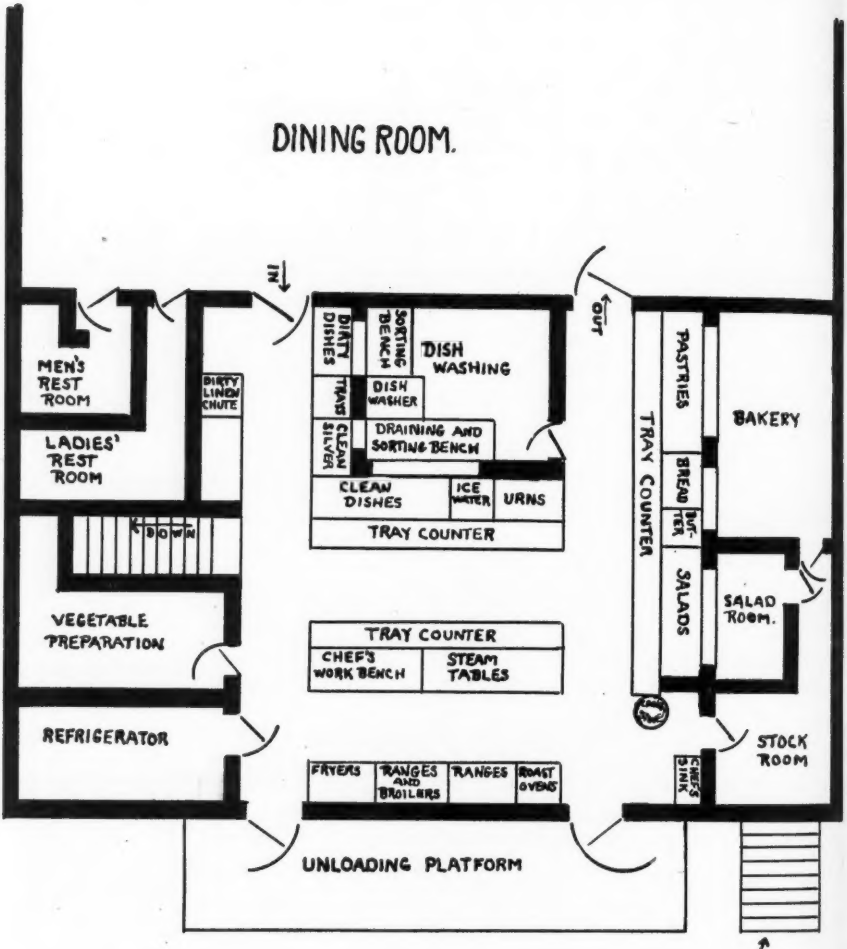


Fig. 1. Schematic floor plan of a small restaurant kitchen.

the vegetable room might be on the other side of the refrigerator or moved to the basement. If space is at a premium the urns and ice water might be placed against the wall in the dining room between the two swinging doors. The space which has been allocated to men's and ladies' rest rooms might be required and these located elsewhere, in which case the dirty linen chute and clean linen closet would be moved closer to the dining room partition so that access to this space might be had where the clean linen racks have been placed in this drawing.

Baker Is Considered

Let us now consider the arrangement from the viewpoint of the baker. He is installed in a department of his own, set apart, yet he has quick access to the supplies that he needs most. In his department are installed modern bake ovens, an electric mixer, a three-burner gas plate, necessary storage racks for baked foods, together with all other equipment for his particular needs.

In most eating establishments all baking is done early in the morning and over-laps the breakfast period when the chef is busy with some short orders and preparation of the day's menu, yet with such an arrangement the activities of either one do not interfere with those of the other as they would if the bake ovens were located next to the ranges.

In some restaurants the bakery is completely segregated from the kitchen, being in the basement or in rooms apart from the kitchen. Of course, if the establishment is small so that it does not warrant the services of a baker, then the bake ovens should be placed near to the range assembly and the other baking facilities and accessories would probably be placed in that space now allocated to the stock room.

Following Up the Sale. Your job isn't finished when the equipment has been sold. Perhaps it isn't your job to actually service equipment, but *it is your job to see that it is serviced.* Adjustments must be made. Tips on ways to save fuel by turning burners down or out will be appreciated. Personal calls at the proper time and the patronage of your friends as well as yourself will always be welcomed. I know of no group of people who are more appreciative and interesting than are those upon whom falls the duty of preparing America's food. If you are sordid enough to make your friendships on the basis of what they return to you in dollars and cents, I know of no group where you can operate to better advantage, and if you better self has not been destroyed entirely by avarice, I am sure that you will find at least one among these people for whom an inner glow of warmth will be felt when you have occasion to refer to him as "My friend, the Chef!" If you make one such friendship, *cultivate it;* for his advice and knowledge in meeting problems other than his own will be worth all the books that could be written on the subject of commercial cooking equipment and practices.

In these few pages I have not

attempted to stereotype your method of operation or to provide you with a "canned" sales talk. The few pointers offered have been to help you in avoiding the most common pitfalls in commercial cooking equipment selling. Once you have passed through the swinging doors into the lion's den you are very much on your own.

I am not a believer in canned sales talks or the methods of the sidewalk pitchman when it comes to selling any type of commercial or industrial equipment. Here you are up against practical people who *know* their stuff, and your appeal must be upon the real worth of your merchandise rather than upon its ecstatic values.

The Buyer Wants the Facts

Your restaurant buyer isn't interested in a flowery oration, but he does want to know what your equipment will do for him. You must avoid misstatements, for he is intensely practical and will quickly trip you up. Just because you know how to cook the Sunday dinner at home, don't think that you know all there is to be known about commercial cooking. Many an A-1 chef who is capable of supervising the preparation of a banquet can scarcely boil water at home without burning it! The two methods of cooking, while being fundamentally the same, are as far apart as day and night in the practical applications.

So much for fundamentals. Now let us pass on to some actual applications of LP-Gases and LP-Gas equipment to commercial cookery in the following chapters.

ICC Revises Rules for Odorizing and Shipment

The Interstate Commerce Commission has announced amendments to the ICC Regulations and Specifications governing the transportation of explosives and other dangerous articles. The following amendments are of interest to LP-Gas men:

"Superseding amending paragraph (b) (1), section 303, order Nov. 8, 1941, to read as follows (packing compressed gases):

"(b) (1) Odorization. All liquefied petroleum gas in a tank motor vehicle shall be effectively odorized by an approved agent of such character as to indicate positively, by a distinctive odor, the presence of gas down to a concentration in air of not over one-fifth the lower limit of combustibility: Provided, however, That odorization is not required if harmful in the use or further processing of the liquefied petroleum gas, or if odorization will serve no useful purpose as a warning agent in such use or further processing. (Note to paragraph is not canceled.)

"Superseding and amending item of table, paragraph (q) (1), section 303, added by order Feb. 26, 1942, to read as follows (compressed gases shipped in tank cars):

Name of Gas	*Maximum Permitted Filling Density Note 1*	*Required Type of Tank Car Note 2*
Liquefied petroleum gas (pressure not exceeding 65 lbs. per sq. in. at 105° F.).	Note 3 only (not including addendum).	ARA-IV and ICC-104 Note 15 and ICC-104

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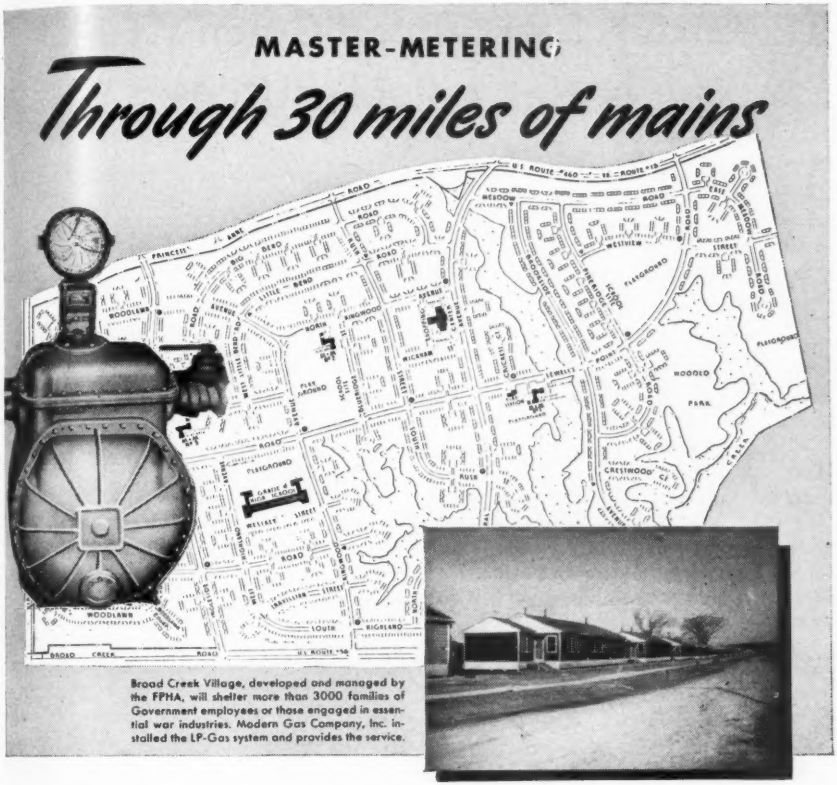

Broad Creek Village, developed and managed by the FPHA, will shelter more than 3000 families of Government employees or those engaged in essential war industries. Modern Gas Company, Inc. installed the LP-Gas system and provides the service.

At the Broad Creek Village housing project in Norfolk County, Virginia, domestic LP-Gas is distributed over an area of 1¼ x ¾ miles at approximately 10 lbs. per sq. in. pressure.

Accuracy of the over-all gas measurement is essential to the proper maintenance of total cost-control figures. The ability of the key meter to take care of itself without pampering is another important factor in its selection.

This master meter—housed in the control building—is the Metric-American 500-B Ironcase LP-Gas Meter, equipped with Base Pressure Index and Volume and Pressure Gage. A Reliance-American H.P.C. governor also is employed in flow control.

* * *

The several types of Metric-American Ironcase Meters, a "heavy-duty" line adapted to handling various different gases, are covered in our Catalog EG-40. Meters of all sizes and pressures.

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Circuit Court Rules Green's Fuel Is Not a Public Utility

THE Circuit Court of Alabama, Montgomery, Ala., rendered a decision on Sept. 29 in favor of Green's Fuel, Inc., of Sarasota, Fla., in the case involving jurisdiction of the Alabama Public Service Commission over the distribution of LP-Gas in two residential subdivisions in Mobile, Ala. Word regarding the victory of Green's Fuel comes from Kenneth H. Koach, company vice-president.

This case was originally opened last Feb. 24 when the Alabama Public Service Commission declared the distribution of LP-Gas to the subdivision named constituted a public utility service, and hence should be controlled by the Commission. The Commission placed all other LP-Gas companies in Alabama under its jurisdiction at the same time.

Green's Fuel affirmed its operations to be beyond the scope of the Commission's authority as the fuel is sold as a liquid and not as a gas.

The case was later appealed to the Circuit Court, where the hearing was held Sept. 15, and the decision favoring Green's Fuel rendered as stated.

Mr. Koach has placed a copy of his brief with the Liquefied Petroleum Gas Association for the benefit of members who may be confronted with similar situations in other states and who desire to profit from the records in the present case.

Guide Book Lists Services, Commodities Under Ceilings

Copies of a new official guide on commodities and services under price ceilings, with a directory of the key operating officials of the various price units in OPA's National Office at Washington, D. C., will be available to industry and the public generally on October 1, the Office of Price Administration has announced.

A charge of $1 will be made for each booklet to cover cost. Six monthly supplements to the directory, bringing its information completely up to date, will be supplied to purchasers, without any further charge. The law permits free distribution of the booklet to OPA personnel, only.

Carter Oil Co. Completes Northwest Consolidation

Yale Oil Corp. and Consumers Oil and Refining Co., purchased by the Carter Oil Co. early this year, have been dissolved and now constitute a part of the Carter's operations in the Northwest division, J. R. McWilliams, Carter vice president, announced recently.

Mr. McWilliams, who is also manager of the company's Northwest division, reported that the accounting force of Carter Oil Co., in addition to accounting forces of the newly acquired companies, has been moved from the Treasure State building to their new headquarters on the second floor of Empire building in Billings, Mont.

Under terms of the transaction, Yale and Consumers at Lovell and Newcastle, Wyo., in addition to the Billings refineries, will be operated under the name of Carter. Carter retains the trade names of the acquired companies.

It's Just Human Nature!

YOU can't blame a fellow for letting his enthusiasm enlarge harmlessly reports that are pleasing to him. Sure, the fish that got away is *always* a big one. Hunting trips are *always* more pleasurable as they are re-lived.

And so it is with good news! We're getting a lot of mighty *welcome* news from overseas. We've had some welcome news from the War Production Board, permitting the manufacture of a limited number of gas and electric ranges — *where it will not interfere with war work!* Yes, there will be some ranges and stoves made — but unfortunately *not nearly so many as most people want to believe and are actually expecting.* Here at L&H, war production comes first — and it will as long as we have a war to win. This same condition exists in many large plants.

We're sure you put winning the war above all else—as we do here at L&H. So let's all try to make the housewives of America understand why civilian goods can't be rushed on the market—and ask them, too, to be patient. As the manufacture of civilian goods increases, L&H will produce its share. We're on the road to Victory! Let's do all we can to speed the day when our boys come marching home.

A. J. Lindemann & Hoverson Co.

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GAS RANGES.. OIL STOVES.. PORTABLE OVENS . OIL HEATERS...WICKS — ALCAZAR

All Manpower Controls Lifted For Returning Veterans

Paul V. McNutt, Chairman of the War Manpower Commission, announced Sept. 27 the lifting of all manpower controls for veterans of the present war.

This action was taken, Mr. McNutt explained, to speed the reemployment of returning veterans and to remove all employment obstacles in the way of their return to civilian life.

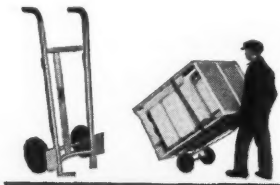
Relaxation of manpower controls for war veterans is provided for in the following manner:

1. Veterans of the present war will not be required to secure or present statements of availability in order to change jobs.

2. Veterans of the present war may be hired by any employer without referral by the United States Employment Service or other authorized referral channels.

3. Any veteran of the present war who seeks employment through USES will be entitled to a referral, as a matter of right, to any job of his choice, without regard to the essentiality or priority status of such job.

4. Veterans of the present war may be hired without regard to employment ceilings. However, all employes who are veterans of this war will be counted against an established employment ceiling unless the applicable local employment stabilization program provides for the exemption of such veterans from employment ceiling determinations. No workers other than veterans of the present war and any other groups that may be exempted locally may be hired if employment is at or above the established ceiling.



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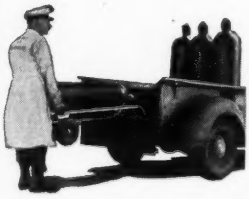

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Why not make your library complete? We have a few copies of the revised Second Edition of the Handbook still available. These, and the Third Edition, sell individually at $5 per copy. While they last we offer *both* editions, in combination, for the bargain price of $7.50. Order your copies today.

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TWO VOLUMES . . . SECOND AND THIRD EDITIONS

BUTANE-PROPANE NEWS, 1709 W. 8th St., Los Angeles 14, Calif.

Eugene Holman Is New President of Standard of N. J.

Eugene Holman, a vice president of the Standard Oil Co. (N.J.) has been elected president of the company, succeeding Ralph W. Gallagher,, who was made chairman of the board.

Mr. Gallagher was elected president of the company in January 1943 and will remain as chairman of the executive committee.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of BUTANE-PROPANE *News*, published monthly at Los Angeles, California, for October 1, 1944.

State of California, County of Los Angeles —ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Jay Jenkins, who, having been duly sworn according to law, deposes and says that he is the publisher of the BUTANE-PROPANE *News*, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Jay Jenkins, 1709 W. 8th St., Los Angeles 14, Calif.; Editor, Arthur Rohman, 1709 W. 8th St., Los Angeles 14, Calif.; Managing Editor, Lynn C. Denny, 1709 W. 8th St., Los Angeles 14, Calif.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Western Business Papers, Inc., 1709 W. 8th St., Los Angeles 14, Calif.; Jay E. Jenkins, Los Angeles, Calif.; George H. Finley, Santa Barbara, Calif.; James E. Jenkins, Los Angeles, Calif.; Arthur Rohman, Los Angeles, Calif.; Craig Espy, Pittsburgh, Pa.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is... (This information is required from daily publications only.)

JAY JENKINS (Signature of Publisher)

Sworn to and subscribed before me this 27th day of September, 1944.

(Seal) SUSAN McCONNELL

(My commission expires June 4, 1947.)

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Need Trucks? File Order Today

A recent bulletin issued by H. M. Thomas, chairman of the Liquefied Petroleum Gas Association Transportation Committee states that the petroleum industry seems at the present to be making an intensive survey of transportation replacements, with particular stress on trucks and automotive equipment. The Petroleum Administration for War have indicated that it is necessary to let them know at least six months in advance of these requirements for them to be of assistance.

The liquefied petroleum gas distributors, who are carrying on one of the essential phases of the war effort, should give immediate consideration to their needs for distribution trucks. Those who contemplate ordering new equipment within the next six months to a year should write their liquefied petroleum gas industry committee or to the association transportation committee, setting forth their expected requirements together with such data as will indicate the essentiality and urgency behind this need.

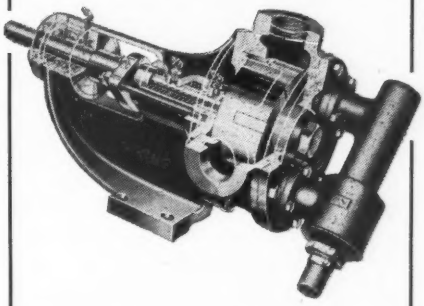
Trucks and tires are at present one of the most critical of our war products, and sufficient information to justify approval will have to be furnished Petroleum Administration for War for them to sponsor and recommend the application for approval.

The addresses of the various industry committee chairmen are:

District I: W. A. Naumer, Carbide & Carbon Chemicals Corp., 30 East 42nd St., New York 17, N. Y.

District 2: G. R. Benz, Phillips Petroleum Co., Chemical Products Department, Bartlesville, Okla.

District 3: L. Abramson, Jr., Petro-



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lane Gas Corp., P. O. Box 4067, Station, F., New Orleans, 18, La.

District 4: Dr. R. W. Leslie, Wasatch Oil Refining Co., 803 McIntyre Bldg., Salt Lake City 1, Utah.

District 5: P. S. Magruder, General Petroleum Corp., 108 West Second St., Los Angeles 12, Calif.

All trucking equipment requirements are covered by WPB 663 (former PD-310) which should be filed according to instructions on the form with the nearest Office of Defense Transportation.

Trucking equipment is separated into two general types: Over-the-road and local distribution, with a further classification for trucks of 16,000 lbs. and less loaded weight capacity, and those with a loaded weight capacity above 16,000 lbs. The supply of the latter is particularly critical.

To obtain new tank for truck or trailer chassis, request a tank manufacturer to make application on your behalf on Form WPB-2317 and send it to the Washington office of the Automotive Division of War Production Board. If you wish to use LP-Gas fuel equipment, old or new, on a new truck, you should file a WPB-809 application with the PAW before ordering the truck.

ANSWERS

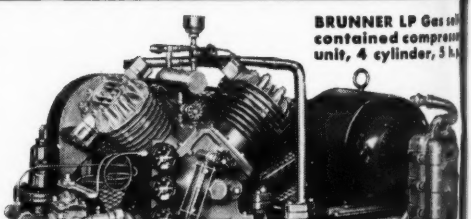
To High Pressure LP-Gas Line Questions on Page 22.

1. a. 94.8; b. 44.4; c. 110.8; d. 338.
2. ⅜ inch standard pipe.
3. 1 9/10 lbs.
4. 575 cu. ft. per hr.
5. 34.2 lbs.
6. 1 in. standard pipe.

YOU LOSE 500 TO 1000 LBS.
of LP Gas in every tank car unloaded

... if you don't salvage residue vapor

You pay for this residue vapor poundage and for its transportation! It cannot be recovered by an ordinary liquid pump, but it can be recovered with the Brunner LP Gas Unit, a compressor assembly that pumps volatile liquids and salvages their residue vapor. Unloading, too, is speeded. When you buy a Brunner LP Gas Unit you buy a pump that has world wide acceptance and is the best for the purpose, regardless of the price paid. The savings effected liquidate the investment in a short time. On any liquid petroleum handling problem consult: Brunner Manufacturing Co., Utica, N.Y., U. S. A.



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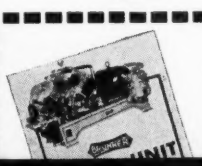

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It describes the Brunner LP Gas
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CURRENT READING

• **Reviews of new books, pamphlets and articles published in recent magazines of interest to technicians and executives in the liquefied petroleum gas industry. Those interested in reading any complete article or book should write to the publications named.**

Butane Dehydrogenation — C. C. Watson, F. Newton, J. W. McCausland, E. H. McGrew and L. S. Kassel. "National Petroleum News," Aug. 2, 1944, pp. 509, 510, 512. The process for the dehydrogenation of butane is a catalytic reaction in which the high operating temperatures required impose severe demands on the catalyst, which is regenerated by treatment with an oxygen-containing gas. A heat exchanger type reactor is used to provide for alternate heating the vapors and cooling during the regeneration process by hot and cold flue gas circuits. The design of the reactor involved several engineering problems, one of which was the selection of a suitable material for the tubes. A special steel alloy was adopted. An ingenious means is provided for the circulation of the cooling and heating flue gases. In commercial installations multiple pairs of reactors are used, providing for continuous operation of the process.

Newly Completed Refining Facilities of the United States—"World Petroleum," Annual Refinery Issue, 1944, pp. 76-133. Brief illustrated descriptions of the following refineries are given: Abercrombie - Harrison; Ashland Oil and Refining Co.; Associated Refineries, Inc.; Atlantic Refining Co.; Champlin Refining Co.; Cities Service Refining Corp.; Consumers Cooperative Assn.; Continental Oil Co.; Crown Central Petroleum Corp.; Eastern States Petroleum Co.; Frontier Refining Co.; General Petroleum Corp.; Great Southern Corp.; Gulf Oil Corp.; Humble Oil and Refining Co.; Magnolia Petroleum Co.; Mohawk Petroleum Corp.; Neches Butane Products Co.; Pan American Refining Corp.; Pennzoil Co.; Phillips Petroleum Co.; Premier Oil Refining; Pure Oil Co.; Republic Oil Refining Co.; Richfield Oil Corp.; Root Petroleum Co.; Shell Oil Co.; Sinclair Refining Co.; Socony-Vacuum Oil Co., Inc.; Southport Petroleum Co.; Standard Oil Co. of Calif.; Standard Oil Co. of Indiana; Standard Oil Co. of Louisiana; Standard Oil Co. of N.J.; Standard Oil Co. (Ohio); Sun Oil Co.; Texas Co.; Tide Water Associated Oil Co.; Union Oil Co.; Utah Oil Refining Co.; Wilshire Oil Co.

New Combustion-Control Methods for All Standard Fuels — R. Reed. "Transactions, A.S.M.E.," July, 1944, pp. 407-412. As a result of extensive study and field experience with combustion problems, the author offers suggestions for increasing the accuracy of combustion control in all types of standard fuels. This is accomplished by overcoming the existing limitations of flue-gas-analyzing methods either by recorded CO_2 concentrations, or by Orsat analysis. Curves are given which provide a simple means for determining "excess air by CO_2" and "excess air by O_2," by the use of which excess-air

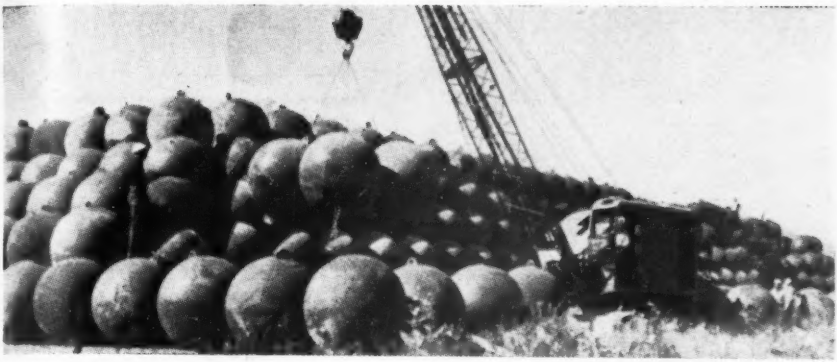
control can be quickly adjusted for any change in fuel to obtain unimpaired combustion. The importance of determining the presence of aldehydes in flue gases is recognized and a positive method for their indication has been developed in the form of a simple apparatus which is described. This check on combustion may save considerable fuel, and a great deal of mechanical difficulty with furnaces.

Present and Future Trends in Motor Fuels—C. E. Boord. "National Petroleum News," July 5, 1944, pp. R-457, 458, 460. Fundamental data concerning the properties of selected hydrocarbon compounds in the gasoline range have been developed in the course of the American Petroleum Institute Hydrocarbon Research Project. The data reported describe the relationship of molecular structure to engine characteristics. Octane numbers of selected paraffins were plotted against their carbon content and the effect shown of changing the straight-line structure to that of analogous isomer compounds. In the five and a half years operation of the project, 116 hydrocarbon compounds have been examined and 17 additional hydrocarbons are in course of production.

Operation of the Central Gas Plant at the General Petroleum Refinery, Torrance, California—R. Maass, General Petroleum Corporation. "California Oil World," 2nd Aug. issue, 1944, pp. 17, 19-22. In the treatment of refinery gases, the presence of valuable unsaturates makes high extractions economically attractive because of the recovery of these compounds. That is, if a high propene extraction is sought, a high propane extraction is the natural result. At the Torrance refinery there is installed, in connection with the 100-octane plant, a 11,000 Mcf. day gas plant designed to handle vapors from the entire refinery. For the first several months of its operation only a portion of its 600 gal. min. oil circulation was needed to meet design extractions. The excess capacity was therefore used to increase extractions above design. The results of these operations are presented in this article. In addition, this paper shows the contrast as well as the similarities in the handling of refinery vapors as compared to natural gases.

The Correlation of Cetane Number with Other Physical Properties of Diesel Fuels—"Journal of the Institute of Petroleum," July, 1944, pp. 193-197. On the basis of the work carried out by the Diesel Index Panel of the Institute of Petroleum Sub-Committee No. 4, it is concluded that the most accurate formula investigated is: Calculated Cetane No. 175.4 Log (Mid-Boiling Point, °F.) + 1.98 (A.P.I. Gravity) − 496. An alignment chart based on this equation is shown. It should be noted that the above formula should not be used with oils containing ignition promoters. For the sake of brevity, it is suggested that the cetane number calculated by means of this formula should be known as the "cetane index."

Explosion-Proof Motors for Hazardous-Gas Locations—E. F. Wehlage. "Power," Aug., 1944, pp. 79-81. Listed are the National Electrical Code Classifications of hazardous gases and dusts, with the author's description of the construction features of explosion-proof electric motors that are safe for these applications. His recommendations are based on extensive experience with electric-motor operation where explosive gases are present.



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WRITE FOR INFORMATION ON POST-WAR PLANS

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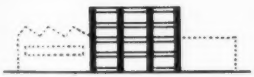
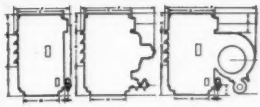
Makes a Heater for Any Size Area

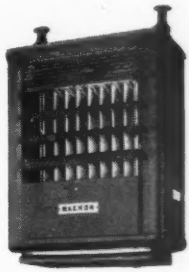


Storeroom, bowling alley, factory or office ... no matter what size or shape area to be heated, Reznor has a heater for the application.



3 TYPES AVAILABLE

Specific requirements determine the type of heater needed. The fan type rates high in sales because it can be suspended from a ceiling or placed on the floor.



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PLACE YOUR ORDER NOW

NOTE TO DEALER . . . We have just issued an easy-to-read data sheet showing dimensions, volume, sizes of gas connections, shipping weight, and other useful data. You can get copies by writing to the Reznor Manufacturing Company, Mercer, Pa.

REZNOR MANUFACTURING CO. **REZNOR** 304 JAMES ST., MERCER, PA.

"GAS HEATERS EXCLUSIVELY SINCE 1888"

GIVE "ON THE SPOT" SERVICE

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LP-GASES

There's money in "spot service" when you sell Sinclair Liquefied Petroleum Gases. The easy portability of this fuel makes it safe, convenient and economical for use ANY TIME—ANY WHERE.

Now Sinclair LP-Gases are on military duty in arctic cold and tropic heat . . . right on the heels of advancing soldiers . . . repairing mechanical casualties and powering mechanical monsters.

Liquefied Petroleum Gases are serving at home as essential elements in synthetic rubber, the manufacture of high-octane aviation gasoline, in chemicals and plastics, and for heat, power and fuel in countless defense plants, factories and war projects.

SINCLAIR PRAIRIE OIL COMPANY

Liquefied Petroleum Gas Division

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THE TRADE

R. S. Rheem, president of the Rheem Manufacturing Co., has declared that American industry should take action now to gear itself for full postwar employment of the disabled American war veteran.

Mr. Rheem asserted that the disabled veteran can be fitted into the pattern of American production after the war, not as a recipient of charity, but as a full fledged worker at proper wages. The secret, he said, is to fit the machines to the men and women and not the men and women to the machines.

The Rheem company, which has fifteen plants, has already embarked on a program designed to provide jobs for disabled veterans. A full study, just completed at the company's South Gate, Calif., plant, Mr. Rheem said, showed that 51% of its total positions could be filled by handicapped persons.

Manufacturer of automatic water heaters and steel shipping containers, the Rheem peace-time line of household utility products includes floor furnaces, boilers and tanks.

The Bryant Heater Co., of Cleveland, has announced through its president, Lyle C. Harvey, the appointment of William R. Teller as director of research and development.

Mr. Teller, who assumed his new duties Oct. 18, has been assistant director of the testing laboratories of the American Gas Association, also located in Cleveland, where he has served in various capacities since 1930.

Shortly after Pearl Harbor, Mr. Teller was placed in charge of the

newly organized war products department of the AGA testing laboratories. He was directly responsible for development of numerous controls and instruments for the Army and Navy and the Office of Scientific Research and Development. He was also in charge of quantity production of automatic continuous flow oxygen regulators for high altitude flying.

A greatly expanded research program is being undertaken by The Bryant Heater Co. under Mr. Teller's direction. It will embrace improvements in gas heating equipment, range lighters, controls and appliances. The company is a member of Dresser Industries, Inc.

The Delta Tank Manufacturing Co., of Baton Rouge, La., through its president, H. S. Phillips, has announced the appointment of Henri H. Jennings as general sales manager of the LP-Gas division.

HENRI JENNINGS

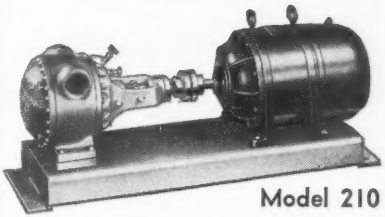
Mr. Jennings comes to Baton Rouge from Tulsa, Okla., and brings a wide experience in selling, merchandising, sales promotion and advertising.

He has spent the last year in Tulsa as vice president and general manager of a well known LP-Gas equipment company.

Delta Tank Manufacturing Co. has been in the LP-Gas tank business since the spring of 1940—finishing and selling their first tank in June of that year.

During these war years it has been necessary to gird for production and precision. To do this the best ma-

SMITH
BUTANE-PROPANE
PUMPS



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STANDARD EQUIPMENT

With Leading LPG Engineers

MODEL 210 (Above) • 2" pipe size. Capacity 50 GPM at 1750 RPM for direct connecting to electric motor.

MODEL 211 • 2" pipe size. Capacity 50 GPM at 500 RPM for tank truck direct connected to power take-off.

MODEL 300 • 3" pipe size. Capacity 100 GPM at 1750 RPM for direct connecting to electric motor.

MODEL 301 • 3" pipe size. Capacity 100 GPM at 500 RPM for large transport service direct connected to power take-off drive.

•

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FLUID SEALED PACKING BOX ELIMINATES HAZARDOUS LEAKS

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250 LBS. WORKING PRESSURE

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Complete Assemblies
Including Motors

Write for literature and prices.

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L.C. RONEY, INC.

meets the demands of the nation. Our plant has gone to war for the duration — but when peace comes, L. C. RONEY products for the LP-Gas industry will meet the demands of dealers everywhere. In the meantime—our stock of LP-Gas equipment is still complete.

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GAS EQUIPMENT CO., INC.
2620 South Ervay Street, Dallas, Texas
GAS EQUIPMENT SUPPLY CO.

chinery available was purchased and top men in tank production were employed.

When materials for the manufacturing of LP-Gas systems are available again, this experienced workmanship will be utilized in making butane or propane systems.

ROBT. COURTNEY

General Controls Co., of Glendale, Calif., announces the opening of a new Kansas City branch at 421 Southwest Blvd., Kansas City 8, Mo., with Robert Courtney in charge as branch manager. The new quarters provide complete facilities for serving customers in Kansas and in adjacent areas in Missouri, Nebraska and Iowa. Bob Courtney is well qualified to extend this service by his long experience and thorough knowledge of automatic temperature, pressure and flow controls and their many uses in the domestic, commercial and industrial fields.

J. E. Brown, sales executive of Pittsburgh Equitable Meter Co.-Merco Nordstrom Valve Co., has been promoted to the position of assistant to the general sales manager, according to A. J. Kerr, general sales manager of the combined organizations. Mr. Brown will maintain offices at the company's Pittsburgh headquarters.

Consolidation of the Columbia, S.C., and Atlanta, Ga., offices of Pittsburgh Equitable Meter Co.-Merco Nordstrom Valve Co., has been announced, coincident to the retirement of F. G. Swaffield, district manager of the firm's Columbia office.

In assuming control of the Columbia office territory, C. C. Moore, manager of the Atlanta district office, now directs field sales in the entire southeast section of the United States. In this territory are the states of Florida, Georgia, Alabama, Mississippi, Tennessee, North and South Carolina, Virginia and most of Kentucky.

GLENN E. BULLIS

Glenn E. Bullis, engineer in charge of butane and propane truck tanks and transports for a large fabricating company in Tulsa, Okla., has joined the Southern Gas & Equipment Co., of the same city, as sales engineer. Mr. Bullis has had considerable experience in designing LP-Gas equipment for transporting butane and propane and will fill an important position for the Southern Gas & Equipment Co.

T. T. Arden, president of the Grayson Heat Control, Ltd., Lynwood, Calif., announces the following promotions in its sales staff: J. E. O'Hagan has been promoted to vice president and factory manager. Hal Singleton has been promoted to sales manager and J. H. Lewis is now assistant sales manager.

The Grayson Heat Control, Ltd., is a division of the Robertshaw Thermostat Co., with main offices at Youngwood, Pa.

Florence Stove Co., Gardner, Mass., has purchased the entire electric range and gas range business of Cavalier Corp., Chattanooga, Tenn., according to a recent announcement made jointly by President R. L. Fowler of Flor-

SMITH METER BU-40—built especially for metering l. p. g.; 50 g.p.m.; 250 lbs. working pressure; guaranteed sustained accuracy; fast, steady flow.

$150.00 per Hour

$1,500.00 per Day

Butane meters measure **money.** At 50 gallons per minute, a meter handling liquid costing 5c per gallon measures $150.00 worth each hour—**$1500.00 worth each 10-hour day!**

That's why **sustained accuracy** is the vital consideration when choosing a meter. That's why **all** Smith Meters are built around the focal point of **sustained accuracy.** The simple, time-tested Smith Rotary Principle, and exclusive Smith Design, provide an unequalled combination of metering speed and sustained accuracy.

Smith meters for tank trucks, bulk plants, refinery and pipe line service are all available on priorities.

SMITH METER COMPANY

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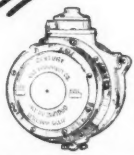
CENTURY



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Manufacturers of:
Butane-propane and natural
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for over 17 years.

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ence Stove and R. T. Frazier, vice president of Cavalier.

Florence has acquired all rights, title, and interest in tools and designs for these ranges and the patents on exclusive features of Cavalier. Also, as a part of the transaction, Florence Stove Co. will supply repair parts for Cavalier ranges now in use, subject to restrictions of war regulations.

Louis Ruthenburg, president of Servel, Inc., Evansville, Ind., wrote an article entitled, "Maximum Total Employment Should Be Our Aim," in the Sept. 16 issue of the **Saturday Evening Post.** It expresses a view that government control of raw material and retail prices should be continued after the war.

In his article, Mr. Ruthenburg emphasized that price controls should be continued only as long as a scarcity of labor and material remains.

Proposed 2-Cycle Engine May Rival Diesel

Possibility of the not-so-distant future development of a fuel-injection, two-cycle engine rivaling the diesel in power and economy, and satisfactory for tractor use, was suggested at the SAE national tractor meeting in the Hotel Schroeder, Milwaukee, on September 14.

Fuel injection, according to H. O. Hill of American Bosch Corp., Springfield, Mass., may restore the two-stroke-cycle engine to favor by correcting its wastefulnes of fuel, relative inefficiency at fractional loads and speeds, and poor idling qualities.

"It appears that an entirely new field is opened up by gasoline injection for the two-stroke-cycle engine," he explained. "The economies which are inherent in the construction of engines operating on the two-stroke-cycle might do more than offset the

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HOT WATER HEATERS	VAPORIZERS
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FLOOR FURNACES	CYLINDER VALVES
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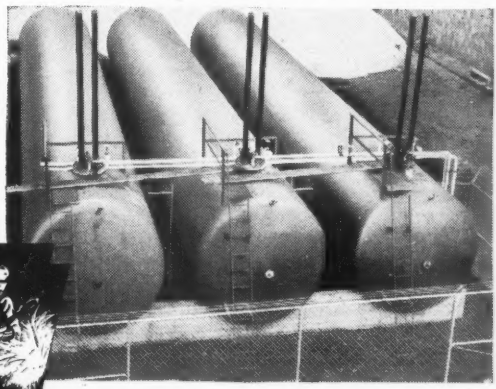
AN INDUSTRY CONSIDERS THE FUTURE

Just as after the last war, improved mass production methods made low priced automobiles available to wage earners in the lower brackets . . . when this war is over, low priced L-P gas service will bring city conveniences for cooking, heating, refrigerating and supplying hot water to farmers and small town residents.

When in the market for propane storage tanks either for surface or underground use it is important to choose carefully a fabricator with a specialized knowledge of design and manufacture.



Downingtown's knowledge includes design, fabrication, specification of materials and selection of methods of handling them. Downingtown's experience insures the safety and endurance of the finished job. Our complete, modern facilities guarantee good service and a job which will pay dividends in years of reliable performance.

It will pay you to get the benefit of our engineering consultation . . . it will enable you to make a wise choice when ready to place your order. Our engineers will gladly work with you on preliminary plans and specifications. We welcome inquiries . . . no obligation.

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cost differential between gasoline injection equipment and the carburetor."

Mr. Hill added that four-cycle engines, if designed for the purpose, also might benefit from the inherent advantages of fuel injection, among which he listed fuel economy, higher power output, increase in volumetric efficiency at speed, better low-speed torque characterictics, excellent cold-starting qualities, and proper functioning on low-grade fuels. Gasoline injection equipment can be applied to carburetor-equipped engines, he said, with some, if not full, advantage.

Mr. Hill warned that fuel injection systems have certain disadvantages, such as higher cost, deterioration in storage, extreme sensitivity to foreign matter in fuel, and, in the case of tractors, higher costs resulting from necessity for using gasoline.

Surplus Goods Distribution In Experienced Hands

Announcement has been made by Mr. Ernest L. Olrich, assistant to the Secretary of the U. S. Treasury, in charge of procurement and surplus, of the appointment of three deputy directors to assist him with the operation of the Office of Surplus Property.

The first is Russell C. Duncan, deputy director in charge of merchandising and sales. Mr. Duncan is president of R. C. Duncan Co., distributors of industrial hardware, Minneapolis, Minn.

The second, Frederick R. Atcheson, deputy director in charge of operations, is comptroller of Marshall Field & Co., Chicago retail stores, and the third member is Albert W. Frey, deputy director in charge of general trade relations, industry advisory committee, publicity, research and personnel, who was professor of

marketing at the Amos Tuck school of business administration, Dartmouth College, during the period 1921-1944 and is on leave of absence from that institution.

Assigned to these deputy directors are the following functions:

Deputy Director Duncan will be responsible for the establishment of policies governing transfers, sales, loans and rentals, exhibits and displays, circularization of government agencies and rehabilitation of surplus property.

Deputy Director Atcheson will be in charge of coding and classification, pricing, inventory control, commodity reports, warehousing, transportation, traffic, appraisal, administrative and fiscal functions.

Deputy Director Frey will have as his responsibilities, personnel, contacts with and establishment of working arrangements with industry advisory committees, trade relations, publicity, research and planning and all matters concerning relations with other government agencies.

Reassurances that there will be no indiscriminate dumping of war surplus consumer goods, and that the Office of Surplus Property will attempt to realize the best possible return for the Government consistent with maintenance and encouragement of a healthy competitive economy were included in Mr. Olrich's statement to the press today. He emphasized the importance of including small business concerns as participants in the surplus property disposal activity.

API Convention Cancelled To Aid Transportation

The executive committee of the API has approved a recommendation of the Institute's president, William R.

Bu-Pro-Fire
Gas Heaters
A GOOD NAME TO REMEMBER FOR GREATER HEATING EFFICIENCY WITH LIQUEFIED PETROLEUM GASES.
DESIGNED ESPECIALLY FOR L. P. GASES
TENNESSEE ENAMEL MFG. CO.
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For Safety
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ETHYL MERCAPTAN

—Purified—

The ACCEPTED standard odorant for liquefied petroleum gases.

MALLINCKRODT CHEMICAL WORKS

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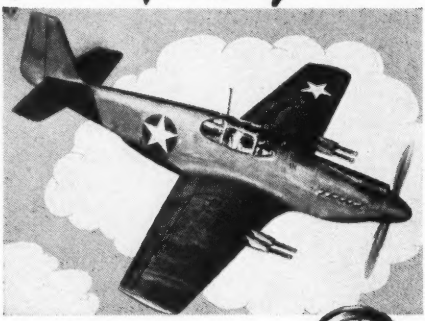
Today's Fighters



Use Tomorrow's Oven Heat Controls

Robertshaw

ROBERTSHAW THERMOSTAT COMPANY
YOUNGWOOD, PENNSYLVANIA

Boyd, Jr., to defer indefinitely the twenty-fifth annual meeting scheduled to be held in Chicago, Nov. 13-16.

This action was prompted by the urgent request of Director J. M. Johnson of the ODT that all conventions planned for the remaining months of 1944 be cancelled in the interest of wartime transportation. He requested that this be done even at the sacrifice of each organization's need for wartime conference and post-war planning.

Tank Car Permit System Modified by ODT

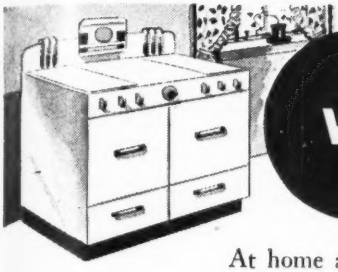
The Office of Defense Transportation announced Sept. 22 the relaxation of three of its restrictions affecting tank cars in line with changes which are taking place in petroleum transportation.

The changes include revocation, effective Sept. 25, of General Order ODT 7, Revised 2, which assigned exclusively to Eastern petroleum service all tank cars in that service. Permits for use of the smaller cars in that service will be no longer required.

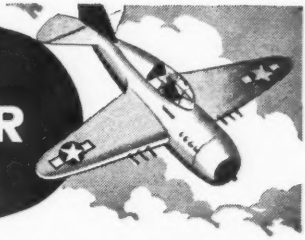
Also, effective Sept. 25, Sec. 502.105 of General Order ODT 7, Revised, is so amended that permits are no longer required for the use of tank cars for distances of over 100 miles, instead of 200 miles as formerly.

Fayette B. Dow, head of the Liquid Transport Department, Office of Defense Transportation, advises that the above order is not to be construed as indicating the existence of a surplus of tank cars for civilian use.

Mr. Dow called attention to the fact that a few shippers have evidently understood the recent revocation of the requirement for Government permits before tank cars can be used for shipments for distances of 100 to 200 miles as meaning that ODT has a supply of surplus tank cars that



IN WAR OR PEACE



At home and on the industrial front, a dependable source of Butane and Propane means more satisfied customers. For more than fifty years, through wars and in peace times, Carter has faithfully served. Write us for higher quality Butane and Propane.

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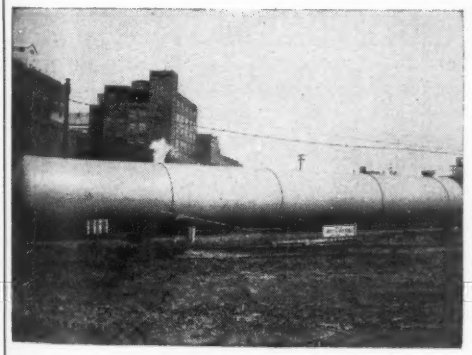

30,000 Gallon Water—25,000 Gallon Liquid Propane Capacity Storage Tank 8'4-13/16" O.D. x 76'9-5/16" Long

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Quality - Safety Economy

Butane-Propane tanks fabricated in strict accordance with the ASME code; API-ASME Code; Dept. of Public Safety, Commonwealth of Massachusetts; and National Board of Boiler & Pressure Vessel Inspectors' regulations.

Bulk Tanks - Skid Tanks
Truck Tanks
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Complete bulk plants designed, fabricated and installed by experienced men. Detailed information and estimates furnished without obligation.

GAS PLANTS FOR MUNICIPALITIES

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Keeping you in
HOT WATER
Is OUR business
A. G. A. APPROVED
WATER HEATERS
'THE Quality LINE'
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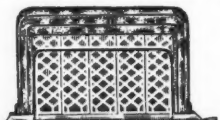

No. 6485-W—5 Double Radiants

PEERLESS RADIANT HEATER

Ready seller—everywhere—at preferential markup—and profit! In beautifully shaded copper, hammer-effect finish, with black enameled guard, brown ornament, porcelain enameled hearth. For use on all gases. 20,000 BTU.

PEERLESS
MANUFACTURING CORP.
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can be placed in that service. "That is a misconception of the situation," he said.

"The fact is that shipments by tank car are substantially as great as they were a year ago. The movements have changed and the average length of haul is somewhat shorter, resulting in an easing of the tank car supply.

"This situation," he said, "can be affected adversely and suddenly by changes in miliatry requirements, by the volume of other traffic and by weather conditions. There is no indicated let-up in the demand for tank cars in the immediate future.

"Tank trucks," Mr. Dow said, "have rendered and are rendering an indispensable service not only in the very large volume that they are transporting—estimated at 128,000,000 gallons of petroleum products a day—but in releasing tank cars for the very long hauls such as to the Atlantic Seaboard and the Pacific Coast.

"All of the over-the-road tank trucks are needed for active service," Mr. Dow said. "That fact should be kept in mind when any substitution of a haul by tank car for a haul by tank truck is considered."

Speed Up Tank Car Movements Says LPGA

The Transportation Committee of the Liquefied Petroleum Gas Association has issued the following bulletin which offers important suggestions to the industry regarding ways to reduce the current tank car shortage:

"The Office of Defense Transportation reports that there is a shortage of pressure cars for handling LP-Gas products, and so that we as an industry may attain the utmost use out of each car and thus avoid, as far as is possible, shortages of these cars to carry out needs, we have several sug-

gestions that are important for every operator to carry out:

"1. Unload tank cars on arrival immediately, *whether it be night or day.*

"2. Notify the railroads of the availability of the empty car at the first possible moment.

"3. Follow up with the railroads on their pulling the empty car from the siding so that it may start back to the originating point for another load.

"4. Use care in scheduling car arrivals so that there is ample storage space for unloading.

"5. In cases where vapor withdrawal delays the release of the car, it may be of greater value to release cars without recovering vapors in order to get the car moving again.

"Keep in mind that a day lost in a tank car movement may result in many customers running out of gas."

Clinton P. Davidson Opens Butane Plant in Gilroy, Calif.

Clinton P. Davidson has recently established himself in Gilroy, Calif., to engage in the LP-Gas business at 157 North Montgomery St. He was formerly located in San Jose.

The new business house will carry a complete line of house-hold appliances, including circulating heaters, water heaters and stoves of all kinds.

A service truck will furnish delivery service to all customers. Maintenance of butane equipment will be another service rendered.

Fuel Conservation Program Is Well Under Way Again

Announcing the appointment of 26 additional area coordinators in 19 States in the national fuel efficiency program being conducted by the Bureau of Mines and more than 5000 volunteers from private industry,

Our peacetime
COFFEE URNS

. . . will help you build volume and good will

● Coffee urn production is still controlled by the urgent requirements of our armed forces. When victory is won, you will again be able to feature Blickman urns (famous for their quality and performance) built especially for butane-propane.

Meanwhile, we suggest that you continue sending in your inquiries about our "load-building" food service equipment, regardless of its possible priority status or scarcity. If unable to make deliveries now, we'll place your name on our Post-Priority List to be considered at once when restrictions are withdrawn. There will be no obligation on your part.

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Manufacturers of Food Service Equipment
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N-Butane
Propane

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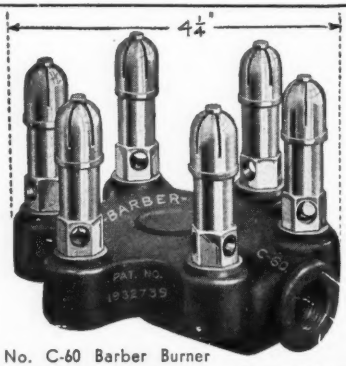


No. C-60 Barber Burner

BARBER APPLIANCE BURNERS

Barber Units, in standard or special shapes and sizes, are correctly designed to fit the individual appliance, and give complete combustion on Butane-Propane or any other gas. You can increase your appliance business—submit your special burner problems NOW to Barber engineers. Complete catalog on request.

THE BARBER GAS BURNER CO.
3704 Superior Ave. Cleveland 14, Ohio

Secretary of the Interior Harold L. Ickes again has urged commercial and industrial consumers to take an active part in the nationwide campaign to "stretch" the available supplies of coal, gas, petroleum, and other fuels.

With the technical assistance of Bureau of Mines fuel experts, the goal of the program is to minimize fuel losses in industrial and commercial establishments by a more efficient use of fuels and equipment.

In addition to the new coordinators, Dr. R. R. Sayers, director of the bureau, announced that two district engineers of the bureau's fuel efficiency section have established offices in midwestern cities to serve as liaison men between area coordinators. They are Arlen Z. Jennings, Chicago, and John G. Mingle, at Indianapolis.

L. J. Willien Appointed Director Of Illinois Gas Institute

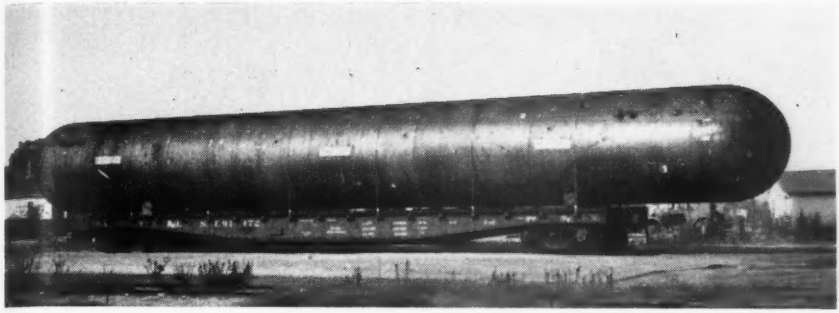
Leon J. Willien, nationally known expert on gas, has been appointed associate director of the Institute of Gas Technology at Illinois Institute of Technology, according to John I. Yellott, director of the Gas Institute.

Mr. Willien has been associated with the Public Utility Engineering and Service Corp., Chicago, as a gas engineer since 1937. At present he is also head consultant on manufactured gas for the War Production Board.

In his new position with the Gas Institute, Willien will have charge of research in gasification and related fields. Also, he will serve as consultant on water gas generation.

Texas Co. Refinery Now in Production

Pressured to completion in 12 months, the new $21,000,000 Texas Co. refinery at Wilmington, Calif., al-



SPECIAL STEEL FABRICATION

The American Butane Storage Tank shown above was especially designed and fabricated for a high octane refinery. The tank is 10 feet in diameter and 76 feet long with a capacity of 42,000 gallons. This tank is just one of many special steel fabrication problems turned over to American. Consultation regarding your steel fabrication problems invited—no obligation.

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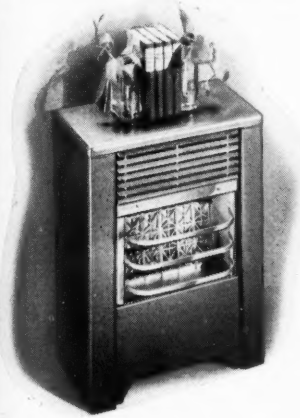
ALHAMBRA CALIFORNIA



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A complete line of Vented and Unvented Quality heaters. Their Ultra Smart Appearance, Outstanding L.P.G. Performance and many Exclusive Features create unprecedented user enthusiasm. You are assured satisfied customers and decidedly lower service costs when you sell this fine line.

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FAMOUS HI-CROWN BURNER

BLUE FLAME PILOT LIGHT

Leading L.P.G. Distributors from coast to coast rate it the finest of all burners for Butane. It "performs" without coaxing, constant cleaning or adjusting. Its quiet, odorless operation, great flexibility and reserve capacity insures your customers being completely satisfied.

FEATURES THAT SELL

A.G.A. Approval, Hi-Crown Burners, Automatic Lighting, Syphonaire Chassis, and Air Insulated Cabinets are features your customers want. Finer—Safer, heaters, yet priced unbelievably LOW. Write for literature.

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ready is producing for the armed forces at a capacity of 500,000 gals. of aviation gasoline daily.

The structure includes a 20-story catalytic cracking unit, towering seven stories above the height limit for downtown office buildings.

Rear-Admiral Joseph R. Defrees, U.S.N. (Ret.) Inspector of Naval Material, 11th Naval District, said the plant should tell that region that its efforts in building and operating vital war plants will help to keep that area solidly in the war effort.

Woman Laboratories Worker Receives Master of Arts Degree

The first feminine scientist of the American Gas Association Testing Laboratories staff to receive a degree of Master of Arts is Miss Elizabeth

Elizabeth McNutt, AGA scientist, at work in Cleveland Testing Laboratories.

McNutt. She completed required studies during a six weeks' term at George Peabody College at Nashville, Tenn., and was awarded the degree of Master of Arts in Home Economics on August 25.

Miss McNutt has been employed by the Laboratories since Sept. 15, 1943. During the past year she participated in domestic gas research studies and helped with the war program. She is now assisting in publication work.

Following graduation from East Texas State College in 1941, Miss McNutt taught vocational home economics at Overton High School, Overton, Texas. Her home is in Tyler, Texas.

Kerrville, Texas, Town Plant Will Serve 1500 Btu. Gas

City Manager George S. Cone, Kerrville, Texas, has announced plans for the conversion of the Kerrville municipal butane-air gas system into a more complete plant designed to serve a larger number of customers.

Faced with the necessity of increasing the capacity of the gas department before the beginning of another winter, Mr. Cone states that the heat content of the gas now being served to customers would be increased from 550 Btu.'s to 1500 units.

The changeover will increase the capacity of the municipal plant two and one-half times, and at the same time provide a more satisfactory service.

Lee Fielder Joins N. J. Gaines Organization in Oklahoma

N. J. Gaines of the Gaines Butane and Equipment Co., Okmulgee, Okla., announces the addition to his staff of Lee Fielder, formerly connected with the Automatic Butane Co., of Houston, Tex.

Mr. Fielder brings into the eastern

The

HOMEMAKER'S FIRST CHOICE

YES, it's a Gas Circulator of the BRILLIANT FIRE standard that will get the call this winter because fuel restrictions will necessitate getting highest efficiency and maximum heat production from every heating unit installed. The alert dealer realizes this, too, and is investing his certificates wisely RIGHT NOW to insure having adequate stock when the call comes. Aside from the fully enclosed vented model B-1 shown above, there are other Two and Three Way Circulators in the BRILLIANT FIRE line, ranging from 20,000 to 75,000 Btu capacity . . . Ready Now. Safety Pilots and Auto Valves available for immediate shipment.

Write for your copy of the new BRILLIANT FIRE Bulletin 460-E showing full line of WPB releases together with specifications and prices.

THE OHIO FOUNDRY & MFG. CO.
STEUBENVILLE, OHIO

"Quality Heating Equipment Since 1846"

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Brilliant Fire
GAS CIRCULATOR
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EXECUTIVE OF LARGE MIDWEST DISTRIBUTOR of propane, with commercial and industrial as well as domestic experience desires change. Will consider any location wherein there lies expansion possibilities. Write Box 360, BUTANE-PROPANE News, 1709 W. 8th St., Los Angeles 14, California.

EQUIPMENT FOR SALE

FOR SALE: PROPANE STORAGE TANK, 15,000 gallons capacity, 200 pounds pressure, also Butane tank 12,000 gallons, 100 pounds pressure. H. MANDELBAUM, 1960 N. Sawyer Ave., Chicago, Illinois.

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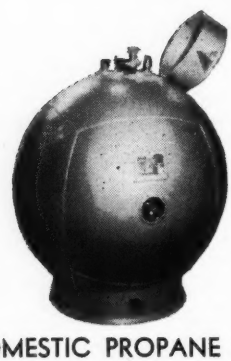

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SUPERIOR TANK & CONSTRUCTION CO.

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Oklahoma butane business a wide knowledge of the liquefied petroleum industry, and will be in charge of the many phases of the expansion of this company, whose postwar program includes organization of company owned plants in eastern Oklahoma for the retailing of butane, natural gas, and liquefied petroleum gas appliances.

Mr. Gaines is also engaged in tank fabrication, manufacturing these systems in his own plant for his own outlets.

Butane May Be Denied Well Drilling Projects

Contemplated issuance of an order by the Petroleum Administration for War prohibiting the continued use of butane in oil development by drilling rigs was vigorously protested by the American Association of Oilwell Drilling Contractors at its meeting in Fort Worth Oct. 3-4.

It would mean that drilling rigs on other than wild-cats would be excluded from the use of butane. The PAW recently announced such an order would be directed to those drilling operations which are so located that a few miles of pipeline would provide natural gas for fuel.

This statement was issued after a report of the Natural Gas and Natural Gasoline Division of the PAW that there would be a butane shortage of from 5,000,000 to 7,000,000 gals. per month.

Manpower Commission Tightens Employee Availability

Paul V. McNutt, chairman of the War Manpower Commission, announced Oct. 16 that all offices of the United States Employment Service have been advised to tighten administration of the WMC requirement for evidence of availability as a prerequisite to the employment of any

worker who has moved into an area.

This action is necessary, Mr. McNutt, explained, to help fill urgent manpower requirements in war plants producing "must" items for the armed forces and retain needed workers in other essential establishments, on a nation-wide basis.

Butadiene Production May Double in Short Time

Production of butadiene, petroleum derivative used in synthetic rubber manufacture, is scheduled to more than double within the next few months.

This report was made at the three-day conference of managers, technical and engineering staff members of petroleum-butadiene plants, representatives of the Petroleum Administration for War, Rubber Reserve Corporation, a subsidiary of the RFC, and university research professors held in Dallas recently.

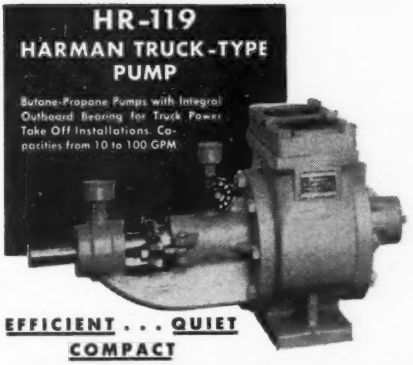
Approximately 40% of all synthetic rubber made from butadiene is scheduled to be made in Texas under the speeded-up program permitted through re-diversion of butalene formerly used in high-octane gas production, it was reported.

September Truck Releases Total 14,545 Vehicles

A total of 14,545 vehicles was released under the truck rationing program during September, the Automotive Division of the War Production Board announced.

Civilian users received 524 light trucks, 9,429 medium and 1,666 heavy trucks and 1,876 trailers.

Since the rationing program became effective March 9, 1942, a total of 304,829 vehicles of all types has been released. This includes 50,902 light, 179,393 medium and 42,553 heavy trucks and 31,981 trailers.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Butane-Propane Pumps with Integral Outboard Bearing for Truck Power Take Off Installations. Capacities from 10 to 100 GPM

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